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ABSTRACT

A plan to meet the needs of multi-ethnic, disadvantaged students in the Hempstead, Long Island, Public Schools, using funds provided under Title I of the 1965 Elementary Secondary Education Act, was put into operation three years ago. Called the Directed Learning Program (DLP) it comprises at present 2342 students who are from five to 12 years of age. DLP uses the concept of non-graded, multi-aged units (within a range of one to three years) of children grouped together in 26 "Learning Families." In most cases, there are four units to a family. Each family is guided by a learning director and has an average of four educational aides working with all the classrooms in the family as needed. Each home-based unit has its own teacher. The aim of the Directed Learning Program is to individualize education by tailoring it to the needs of each child. It was assessed in regard to whether DLP students made significant gains in reading and math during the school year; the quality of the DLP reading curriculum and mathematics curriculum; and the attitudes of the community toward DLP. In order to find out how the DLP students performed in reading and math, the Metropolitan Achievement tests were used. These were administered before and after the school year. Also, questionnaires were given to a random 25 percent sample of students to measure self-concept and attitudes toward school. (Author/JM)

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FINAL REPORT

OF THE EVALUATION

OF THE

DIRECTED LEARNING PROGRAM

OF THE

HEMPSTEAD PUBLIC SCHOOLS

HEMPSTEAD, N. Y.

DURING ITS THIRD YEAR

1971 - 1972

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Special thanks are given to Dr. Norman Scherman, Former Superintendent of Schools, Dr. Laval Wilson, Acting Superintendent of Schools for Instruction, Mr. Edwin Kuffner, Director of Pupil Personnel Services, and Mr. John Rice, Jr., Director, State and Federal Programs, for their assistance.

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EXECUTIVE SUMMARY

A plan to meet the needs of multi-ethnic, disadvantaged students in the Hempstead, Long Island, Public Schools was put into operation three years ago. Called the Directed Learning Program (DLP), it comprises at present 2,342 students who are from 5 to 12 years of age.

DLP uses the concept of non-graded, multi-aged units (within a range of 1-3 years) of children grouped together in 26 "Learning Families." In most cases, there are four units to a family. Each family is guided by a learning director and has an average of four educational aides working with all the classrooms in the family as needed. Each home-based unit has its own teacher.

The aim of the Directed Learning Program is to individualize education by tailoring it to the needs of each child.

The Teaching & Learning Research Corp., under contract to Hempstead Public Schools assessed the program in regard to whether DLP students made significant gains in reading and math during the school year; the quality of the DLP reading curriculum and mathematics curriculum; and the attitudes of the community toward DLP. Data relating to these components of the study were collected and evaluated.

In order to find out how the DLP students performed in reading and math, the Metropolitan Achievement tests were used. These were administered before and after the school year -- in Spring 1971 and in Spring 1972. Also, questionnaires were given to a random 25% sample of students to measure self-concept and attitudes toward school. Learning directors, especially trained, performed two 45-minute observations of each DLP classroom, and evaluations based on their observations were made by third parties.

The DLP curriculum was reviewed by four experts in continuous education. They judged the quality of DLP reading and mathematics curricular materials, compared them to those of a similar program, and conducted on-sight visits to DLP classrooms.

To find out what parents thought of DLP, meetings were held in participating schools. Each meeting brought together Teaching & Learning discussion leaders, parents, principal, and interested teachers. Questionnaires were distributed to parents. And their comments in open discussion were recorded.

The achievement test comparisons yielded rather complicated results. These should be viewed not only in terms of gain but also in terms of rates of progress. A sampling --

* the six year old DLP student group in both Reading and Math had scores exceeding the national average.

* the ten year old group began the year and ended the year somewhat below average in Reading, however their progress was greater than the national average.

(See page 72 for a complete summary.)

Student responses to attitude questionnaires indicate that the students have a positive attitude toward school and feel they have the ability to do better than average school work.

Findings based on learning directors' classroom observations show that the level of individualization within classrooms for all families and all schools has increased. (It should be noted, however, that individualization does not indicate quality of instruction.)

The following are highlights from the summarized findings of the curricular experts in continued education:

-- The reading program needs more supplementation than the mathematics program.

-- Classroom materials were generally easy to work with. Teachers are provided with a variety of educational materials that meet many of the students' needs. These materials should be made more suitable for a multi-ethnic, urban population.

-- Total teacher involvement is necessary to the success of the program. Teacher workshops and in-service training were deemed highly effective methods of encouraging teacher involvement.

Most Hempstead parents are in favor of DLP, but parents at different schools expressed their concern about the program. Confusion exists about what "individualization" really means. Many parents wanted more diversified and abundant materials made available to their children. Some wanted the curriculum broadened or improved by adding more science, art, social studies, and Spanish language instruction.

The Teaching & Learning Research Corp. evaluation team recommends that the Directed Learning Program be continued with the support of Title I funds, and that continuous efforts be made to assure the quality of the program and make it more responsive to students' needs.

Certain concrete steps are also recommended. Among them are development of a central resource file by teachers; teacher workshops that cover aspects of DLP more thoroughly; minimum acceptance standards established for each objective; class group diagnostic tests provided to determine starting reading levels; a variety of audio-visual, manipulative and inter-ethnic materials made available to the schools.

More effective ways of communicating with parents should be sought. Parent meetings in homes and videotapes of classroom activities that are shown to parents unable to visit classrooms are a few suggestions for bringing to parents an awareness of the program.

Chapter I INTRODUCTION

CHAPTER I

INTRODUCTION

The village of Hempstead, Long Island, is in reality an urban center in the middle of what might be characterized as the largely middle to upper class suburbs of surrounding Nassau County. Hempstead is beset with many of the problems typical of our large cities; the population is in a state of flux with the white middle class population manifesting a slow decline, and a concomitant increase in the black and non-English speaking population. The majority of the children attending public schools in Hempstead is from the latter groups, far in excess of their actual proportion in the population as a whole. As in New York City, there has been an ever-increasing tendency on the part of white parents to send their children to non-public schools, both "private" and parochial.

Traditional graded classes proved highly ineffective for the children attending Hempstead Public Schools: their particular needs were not being met and to the extent that they are living in a competitive, evaluative society, these children suffered in comparison to state and national norms on standardized achievement tests in reading and mathematics.

Those responsible for formulating the educational policy of the Village, in light of the overwhelming evidence that radical changes were necessary, evolved a plan to better meet the educational needs of all children attending Hempstead public schools, including those from multi-ethnic backgrounds and disadvantaged homes. This plan, subsequently named the Directed Learning Program (DLP), has just completed its third year of operation. At present the DLP comprises 2,342 students from 5 to 12 years of age, the traditional elementary grades, and plans are in progress to continue the DLP through the District's Middle School. Rather than graded, highly structured classes, the DLP uses the concept of non-graded multi-aged units (within a range of 1-3 years) of children grouped together in 26 "Learning Families," with, in most cases, 4 units to a family. Each family is guided by a Learning Director and has an average of 4 educational aides working with all the classrooms in the family as needed. Each home-based unit has its own teacher. Consequently, education is individualized by being tailored to the needs of each child. Along with a concept of continuous learning, the curriculum is considered to be sequential and cumulative, providing for small, increasing levels of mastery building and reinforcement of success. When the student is ready to work at the next level he goes to it directly. The role of the teacher is now that of guide, free to offer help to each child as needed. Thus, she becomes an equal partner in the educational process: a guide to learning, an imparter of information, and transmitter of values, rather than an authoritarian figure.

Pupils spend most of their time in home-base groups but work each day with other reading and math groups achieving at their level (there are 15 levels of mastery for reading and 16 for mathematics). A minimum of 80% mastery constitutes completion of a skill level. The district has prepared reading and mathematics curricular materials adapted to the special needs of the program. Teacher handbooks provide scope and sequential levels, and competency evaluations.

Social studies, science, and creative activities such as singing, painting, making puppets and putting on plays can be done exclusively in the home-based unit or in collaboration with other children in their family, depending on the unit of study and scope of activity.

The flexibility of the Directed Learning Program is one of its greatest assets. All modalities of teaching and learning are utilized: one-to-one work between student and teacher or teaching aides, independent study, small and large groups, and pupil team learning. Responsibility for learning is shared by the entire school population, from principal to student.

In addition to the learning directors, district curriculum specialists are available for consultation, as are speech therapists, psychologists, a nurse, guidance and social workers and other community-based resources.

In an attempt to communicate better with the Hempstead Community, the Parents' Guide to the Directed Learning Program has been rewritten for greater relevance to parents of DLP students, and range of grade equivalents covered has been extended from Kindergarten through grade equivalent 6.

EVALUATION PROCEDURES

Prior to the formulation of a final evaluation design, meetings were held with Dr. Normal Scherman, at that time Superintendent of the Hempstead School district, Dr. Laval Wilson, then Assistant Superintendent of Schools for Instruction, Mr. Edwin Kuffner, Pupil Personnel Director, and Mr. John Rice, Jr., Director, State and Federal Programs, to determine the most appropriate areas upon which to focus evaluation of the 1971-1972 Directed Learning Program. The following evaluation objectives were promulgated.

A. To assess whether students in the DLP made significant gains in reading during the school year.

B. To assess whether students in the DLP made significant gains in mathematics during the school year.

C. To assess the quality of the DLP reading curriculum.

D. To assess the quality of the DLP mathematics curriculum.

E. To assess the attitudes of the community toward the DLP.

In order to quantify the first and second evaluation objectives (whether students in the DLP made significant gains in reading and math during the school year) pre and post administrations of the Metropolitan Achievement Tests were used. The Spring 1971 administration served as the pre-test measure, while the Spring 1972 administration was used as the post-test index. In addition to pre-test scores, the number of years a student has been in the DLP (1,2,3) was used as a prediction of post-test scores in a multiple regression analysis.

Summaries of these statistical analyses will be found in Chapter VI.

A 25% random sample of each class was administered pre- and post-test questionnaires measuring self-concept and attitudes toward school (see Appendix B). The pre-test administration was conducted at the end of September, 1971, by a multi-ethnic, specially trained team of Teaching & Learning personnel while the post-test was administered by the team during the last week of April, 1972, just prior to the spring 1972 achievement tests.

Two 45-minute observations of each DLP classroom were made by the Learning Directors, specially trained in the use of the "I" Scale (see Appendix C) by Teaching & Learning Research Corporation staff. In the interest of objectivity Directors did not observe their own classrooms, and subsequent evaluations based on these observations were made by third parties, following the "double blind" procedure. A detailed account of this aspect of the evaluation will be found in Chapter IV.

To assess objectives C and D (the quality of the Directed Learning Program reading and mathematics curricula) four experts in continuous education were selected to review DLP reading and mathematics curricular materials, compare them with similar curricular materials of another continuous learning program, and conduct on-site visits to DLP classrooms. Curricular materials were analyzed on the basis of such criteria as skill placement, competency measures, adequacy of materials and procedures for a multi-ethnic district and their suitability for a continuous progress program. Chapter IV is devoted to an in-depth treatment of these objectives.

For the purposes of assessing objective E (the attitudes of the community toward the Directed Learning Program) seven parent meetings were held one in each of the participating schools (Jackson and Jackson Annex were combined) during the month of May, 1972. Multi-ethnic teams of Teaching & Learning discussion "leaders" were present at each of these meetings in addition to a sample of parents from each school, the school principal and interested teachers.

Questionnaires were distributed to the parents attending to determine their attitudes toward the DLP as a continuous progress, multi-aged, skill-oriented program. Parent perceptions of their role in the educational process, their communication with the school and with the program as a whole were also elicited. In addition to the questionnaires, open discussion responses were recorded, and in many cases, the latter proved more informative and expressively dramatic than the written responses to the questionnaire. Chapter V deals with parent perceptions of the Directed Learning Program. Included are a content analysis of responses, a table of response frequencies and percents, and a report of differences among schools.

The last chapter of the Final Report contains Conclusions and Recommendations, based on the inputs of the curriculum experts, data content analyses by the Teaching & Learning Research Corp.,and site visits.

All instruments used in the 1971-1972 evaluation of the Directed Learning Program are to be found in the Appendix Section.

A First Interim Report, Summary of Learning Directors' Observations of DLP Classrooms, was submitted in November, 1971.

The Second Interim Report, a report of the pre-test of students' attitudes toward themselves as learners and toward school was submitted in January, 1972.

Chapter II ATTITUDES OF STUDENTS

CHAPTER II ATTITUDES OF STUDENTS

An integral part of the process of assessing whether students in the Directed Learning Program made gains in reading and mathematics during the 1971-1972 school year involves a pre and post measurement of student attitudes. In the following section the data obtained from these assessments are reported together with certain pre and post test comparisons. In addition, a comparison of certain responses between Black and Non-Black students is included. The attitude questionnaire can be found in Appendix B.

Procedures

The Teaching & Learning evaluation team was an ethnically mixed group of educator/interviewers specifically trained to administer the interview schedule. This instrument was used to collect data concerning student attitudes toward their own abilities as students, their attitudes toward school, and their feelings of acceptance by others at school. According to the evaluation design, a 25% random sample was chosen from each classroom in the Directed Learning Program. Specifically, each classroom teacher was asked to provide the interviewers with every fourth name from her alphabetical list of students. The interviews were conducted in areas set aside by the building principal or the Learning Directors. Students were either collected from the classroom by the interviewer or delivered to the interview area by a teaching assistant. The interview lasted approximately five minutes, after which time the student was returned to his group.

Of the 694 students interviewed during the October pre tests, 588 (85%) were available and were interviewed during the April post testing.

Findings

Self-concept of Abilities

In the first section of the questionnaire students were questioned as to their feeling about themselves as learners. Table 1 below includes a summary of pre and post responses, while Tables 2 and 3 include means, standard deviations and correlated 't' comparisons of the pre and post test.

Table 1 Categorization of Responses - Questions 1-6 Reported in Frequency and Percent for the Total District.

Pre and Post

Question		1		2		3		4		5*		6*	
		Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Better	#	298	235	251	200	338	267	292	279	297	264	125	65
	%	43	40	36	34	49	45	40	47	87	92	37	22
Same	#	323	315	358	344	321	304	365	290	33	18	202	220
	%	47	54	52	59	46	52	50	49	10	06	61	77
Poorer	#	73	37	81	43	34	17	37	19	11	5	6	2
	%	10	06	12	07	5	03	10	03	3	02	2	01

* Questions 5 and 6 were administered only to intermediate students

Table 2 Means, Standard Deviation and Correlated 't' ratios for the total score - questions 1-6 for the Total District.

PRIMARY

TEST	N	$\bar{x}$	S.D.	t
Pre	299	1.64	1.67	2.31[a]
Post	299	1.89	1.54	

[a] $p < .05$

Table 3 Means, Standard Deviation and Correlated 't' ratios for the total score - questions 1-6 for the Total District.

INTERMEDIATE

TEST	N	$\bar{x}$	S.D.	t
Pre	289	2.03	1.47	1.57[b]
Post	289	2.19	1.64	

[b] n.s. at .05

Although our primary interest in collecting this data is to examine pre-post differences and then use them to help explain achievement gains, it is interesting to note several clear indications from this data. First, students in general feel rather positive in regard to their ability to do average or better than average work in school (87-98%). Conversely, only between 1 and 12%, depending on the question, felt that their abilities were poorer than those of their classmates or their chances of success were poor. This may be an accurate reflection of reality, an overly optimistic view for some students, or may reflect the general concern for individual differences underlying the DLP philosophy.

A second finding is relevant to items 5 and 6 which were administered to intermediate families only. 87% on the pre test and 92% on the post test of these students reported that they think they can finish high school and almost all of those sampled, 98% on the pre test and 99% on the post test felt that they could do average or superior work if they went on to college. The intermediate students seem to feel very positive about their chances for educational success. If our current thinking about the relevancy of self-concept to achievement is supported by the performance of the Hempstead student, then future gains in learning should be very satisfying.

After the "Better, Same, Poorer" responses were quantified 't' tests for correlated samples were performed to compare pre and post scores.

Even though there was generally a very positive self-concept reported in the pre test, nevertheless there was a sufficient increase in post-test data, at least for the primary grades, to have resulted in a significant difference. More than likely, lack of significance on the intermediate data is a function of the already high self-concept expressed in the pre test.

Attitudes About School

The second section of the interview schedule attempted to ascertain each student's attitudes about school by rating his responses to the question: (John), how do you feel about coming to school every day?" Responses were assigned numerical values by the interviewer, from 9 (really loves going to school) through 5 (doesn't care one way or another) to 1 (hates school, wants to stay at home). Due to the nature of the rating process, responses have been categorized as positive (7-9), neutral (4-6) or negative (1-3). The frequencies and percentages are reported below for the total district:

Table 4 Students' Attitude Toward School (quest. 7) TOTAL DISTRICT Pre and Post Responses Reported in Frequency and Percent.

	Pre		Post	
	#	%	#	%
Positive	545	78	471	80
Neutral	91	13	60	10
Negative	64	9	54	9

An examination of the data clearly summarizes the attitude of the Hempstead child toward school. In October almost 4/5 of the students reported that they enjoyed going to school and fewer than 10% said they did not like going. At the end of the year this strong positive attitude was confirmed.

Students' Attitude Towards Others at School

The third portion of the interview schedule was concerned with students' perceptions of their acceptance by others in the school. The first question in that section was open-ended and asked the student to mention those persons whom he feels "care about how well he does in school." The responses to this item were characterized as to the role of the person mentioned and are reported below.

Table 5 Students' responses to question 8: "Who do you think cares about how well you do in school" reported in frequency and percentage for the total district.

	Pre		Post	
	#	%	#	%
Teachers	360	29	332	36
Parents	516	41	452	49
Peers	214	17	101	11
Other (Incl. self)	157	13	41	4

An examination of Table 5 reveals that of the people named as "caring" 29% on the pre and 36% on the post interview were teachers or other school personnel.

From a different perspective, 51% of the students on the pre interview and 56% of the students on the post interview mentioned a school person as caring. In comparison parents were mentioned by 74% of the students in October and 77% in April.

While there are no available normative data, slightly better than 1 of every 2 Hempstead students in the DLP feels that his teacher or other school person cares about how well he does in school while approximately 3 out of every 4 feel that way about their parents.

The next series of questions in this section was designed to determine the student's perception of whether his teachers, principal, teacher aide and classmates are glad to see him each day. Responses were categorized as "yes," "don't know" and "no" and are reported below in frequencies and percents for each role.

Table 6 "Students' Perception of whether his teachers, principal, teacher aide and classmates are glad to see him each day" (quest. 9-12) - Reported in frequency and percent for the total district.

Pre and Post

	Teacher				Principal				Teacher Aide				Classmate			
	Pre		Post		Pre		Post		Pre		Post		Pre		Post	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
YES	566	82	482	82	542	78	437	74	603	87	472	86	548	79	505	86
DON'T KNOW	101	14	66	11	122	18	121	21	61	9	56	10	82	12	55	9
NO	27	4	41	7	30	4	31	5	30	4	24	4	63	9	29	5

An examination of Table 6 reveals that most children feel that their teacher, principal, teacher aide and fellow classmates are glad to see them in school each day. Teacher aides are seen somewhat more positive on this dimension, with 87% of the total student sample giving them a "yes" response. The mean for teachers, principals and classmates, however, was approximately 80%. Principals received the highest "Don't know" response (18%) in part because some children rarely saw the principal or thought that the principal didn't know them so they were unaware of his or her feelings. Fellow classmates received the highest (9%) negative response. It might be fruitful to follow up this finding, as the questionnaire doesn't go into the reasons for a particular response. Approximately 4% of the total sample didn't seem to feel that anybody was glad to see them in school.

Multi Ethnicity of Program and Materials

In almost half (3 of 7) of the schools on the pre interview and in all on the post interview the following two questions were posed to each student:

A. Are there any pictures in your classroom of Blacks, Spanish speaking or Oriental people? If yes, where in the classroom?

B. In your classroom, do you discuss the idea that Black, Spanish speaking and Oriental Americans help to make our country a good place to live?

Children responded to both questions either positively or negatively. In the case of Question A, an attempt was made to determine where such illustrations were observed. The following is a summary in frequencies and percents of these responses, on both the pre and post interview.

Table 7 Responses to Question A: "Are there any pictures in your classroom of Blacks, Spanish speaking or Oriental people?" Reported in frequency and % for the total sample. Pre and Post

	Pre		Post	
	#	%	#	%
Yes	176	56	397	70
No	136	44	168	30

An analysis of the yes-no responses to Question A reveals that on the whole, students have reported that illustrations of Black, Spanish speaking and/or Oriental Americans are found in their classrooms. It would appear that although these materials do exist in the Hempstead schools, that either (a) there is an insufficient supply, (b) they are not present in each and every classroom with equal visibility, or (c) some children are simply not aware of these classifications or distinctions. Clearly, we are left with unanswered questions. Do students, especially the very young ones, when viewing a picture of a child being examined by a dentist,see the child as Black, non-Black or just as a child? Are the subtle presentations of some teachers concerning the value of each American to our society taken as just that, without distinction to race, national origin, or similar categories?

Those students who answered "yes" to this question were asked to report where these materials could be found. A summary of these responses is presented below.

Table 8 Location of Multi Ethnic Illustrations by frequency and percent District wide - Pre and Post.

	Pre		Post	
	#	%	#	%
Books	65	31	127	31
Walls	88	42	236	57
Other	57	27	51	12

On both pre and post interview responses, illustrations were reported to be most frequently noticed on walls,indicating that the teachers planned or provided this curricular emphasis. It is equally clear that the published books used in the classroom do not universally address themselves to this need.

Question B asked: "In your classroom, do you discuss the idea that Black, Spanish-speaking and Oriental Americans help to make our country a good place to live?" The responses to this question are reported in the table below.

Table 9 Responses to Question B: "In your classroom, do you discuss the idea that Black, Spanish speaking and Oriental Americans help to make our country a good place to live. Reported in frequency and percent for the total sample.

	Pre		Post	
	#	%	#	%
Yes	152	49	398	70
No	160	51	174	30

As was the case with Question A two comments seem appropriate. First, either there exist inter-class or inter-school differences or children are simply not aware of the distinction being made. Secondly, somehow between October and April, the message of the equality of the contributions of all men has been "received" by a greater proportion of the sample than was the case on the pre test.

PART II

COMPARISON OF RESPONSES BETWEEN BLACK AND NON-BLACK STUDENTS

While the primary reason for the collection of this attitudinal data was to help explain growth in reading and mathematics during the 1971-1972 school year, we were additionally concerned with answering the general question: "Do the attitudes toward self and school expressed by the students in our Hempstead Directed Learning Program sample differ according to racial identity?"

Although it would be most worthwhile to ascertain whether a student's concept of self is a function of his race, that is, caused by his racial identity, it is impossible to make any cause and effect statement. We are, in fact, limited to answering the question, "Is self-concept related to race?" or phrased differently, "Do the Black students in the sample view themselves in ways different from the non-Black students?"

A similar distinction must be made for the data concerning attitudes toward school and perceptions of others' concern about the students' school work. While intensive psychological interviews may glean data as to why a student feels his teacher does or does not care about how well he does in school, or about why he does or does not enjoy coming to school, such inferences are <u>not</u> possible from the data collected. Rather, once again, we are able only to answer the question, "Is the racial identity of the student related to his response, or do Black students view school and school personnel differently from non-Blacks?"

In an attempt to answer the questions referred to above, Chi square analyses were performed on each question. A significant Chi square would inform us of a differential response pattern between the Black and non-Black student. We would expect that with a population split of approximately 75% Black and 25% non-Black students, the responses to any question would reflect the same breakdown. When the results differ substantially from that proportion, we consider the difference to be significant. Significance is estimated in this study at the .05 level. The following tables show the responses to each question, for Black and non-Black students, on both the pre and post tests.

Table 10 Chi-Square Values of the Comparison of Black and Non-Black Responses to Questions 1-6.

Pre-test

Question #	Responses BETTER	SAME	POORER	χ^2
1. Black	236	244	56	1.189
Non-Black	62	79	17	
2. Black	200	271	63	1.346
Non-Black	51	87	18	
3. Black	273	236	19	12.898*
Non-Black	65	85	15	
4. Black	239	263	30	8.646*
Non-Black	53	102	9	
5. Black	231	27	7	1.580
Non-Black	66	6	4	
6. Black	108	147	4	8.733*
Non-Black	17	55	2	

* χ^2 is significant at .05 level with 2 degrees of freedom at 5.991.

Table 11 Chi-Square Values of the Comparison of Black and Non-Black Responses to Questions 1-6.

Post test

Question #	Responses BETTER	SAME	POORER	χ^2
1. Black	195	238	26	5.804
Non-Black	40	77	11	
2. Black	160	264	35	1.065
Non-Black	40	80	8	
3. Black	221	227	11	7.270*
Non-Black	46	77	6	
4. Black	225	218	16	2.920
Non-Black	54	72	3	
5. Black	203	16	4	1.415
Non-Black	61	2	1	
6. Black	58	163	2	7.216*
Non-Black	7	57	1	

* χ^2 is significant at the .05 level with 2 degrees of freedom at 5.991.

Questions 1-6

In responding to these items measuring the students' self concept, a greater proportion of Black students than would have been predicted by their representation in the total population answered positively on items 3,4 and 6 on the pre test and items 3 and 6 on the post test.

Table 12 Chi-Square Values of the Comparison of Black and Non-Black Responses to Questions 7-12.

Pre-test

Question	POSITIVE	NEUTRAL	NEGATIVE	χ^2
7. Black	423	65	41	6.670*
Non-Black	122	26	23	

	TEACHERS	FAMILY	PEERS	OTHERS	χ^2
8. Black	258	401	176	119	9.071*
Non-Black	102	115	38	38	

	YES	DON'T KNOW	NO	χ^2
9. Black	436	72	20	1.616
Non-Black	130	29	7	
10. Black	422	83	25	6.172*
Non-Black	120	39	5	
11. Black	458	44	24	.744
Non-Black	145	17	6	
12. Black	420	56	51	3.646
Non-Black	128	26	12	

* Significant at .05 level

Table 13 Chi-Square Values of the Comparison of Black and Non-Black Responses to Questions 7-12.

Post test

Question	POSITIVE	NEUTRAL	NEGATIVE	χ^2
7. Black	370	48	41	0.577
Non-Black	101	12	14	

	TEACHERS	FAMILY	PEERS	OTHERS	χ^2
8. Black	251	356	78	33	1.313
Non-Black	81	96	23	8	

	YES	DON'T KNOW	NO	χ^2
9. Black	375	50	34	0.781
Non-Black	107	16	7	
10. Black	343	90	26	1.602
Non-Black	94	31	5	
11. Black	371	46	21	1.401
Non-Black	101	10	3	
12. Black	391	40	28	6.787*
Non-Black	114	15	1	

* Significant at .05 level

Items 7-12

While items 7,8, and 10 were significant on the pre test and item 12 on the post test, no consistent response pattern can be found between the pre and post testing on these items. The general level of answers continues to be very positive; however,for those items where significant differences in proportion of responses existed on the pre test,no such difference exists on the post test.

The significance in item 12 on the post test is clearly due to the "no" answer and the ratio between Black and Non-Black responses. While it is possible to read into this question a racial reason for acceptance, such an interpretation would be totally unwarranted based on the question asked.

Table 14 Chi-Square Values of the Comparison of Black and Non-Black Responses to Questions A and B.

Pre-test

Question	YES	NO	χ^2 *
A. Black	155	111	2.46
Non-Black	21	25	
B. Black	124	140	2.03
Non-Black	28	20	

* χ^2 .05 (1) = 3.841

Table 15 Chi-Square Values of the Comparison of Black and Non-Black Responses to Questions A and B.

Post test

Question	YES	NO	χ^2 *
A. Black	302	106	5.537
Non-Black	131	26	
B. Black	314	106	0.06
Non-Black	115	37	

* χ^2 .05 (1) = 3.841

Questions A and B

It is difficult, if not impossible, to make any pre-post comparison on these two questions in that 4 of the 7 schools did not participate in the pre test data collection. Therefore, significance on question A cannot be attributed to a greater lack of awareness in April than in October or to the simple addition of the new sample.

PART III

SUMMARY

This report indicates some preliminary findings in the assessment of gains made by students in the Directed Learning Program in attutudes during the current school year. In general, students feel positively about their ability to do average or better than average work in school. Most of them feel positively about coming to school each day (although some don't like to get up in the morning, most are happy to be in school once they get there). About three quarters of the students interviewed feel that their parents and family care about how well they do in school, while about half felt that their teachers and other school personnel care. About 80% of all students in our sample felt that school personnel and fellow classmates are glad to see them in school each day.

Our data indicate that Black students' responses are generally more positive about themselves and attitudes toward school than would normally have been predicted from the proportion of Black students in the sample.

In addition, the general inconsistencies regarding student perceptions of materials and class discussions concerning the contributions of Black, Spanish speaking and Oriental Americans prevent any generalization.

Final pre-post comparisons of the attitudinal data reported in this section continue to emphasize the generally positive feelings expressed by the average DLP student toward himself and his school. It is clear that this is an asset to any school program and should, if the research literature is correct, contribute to positive changes in achievement.

Chapter III INDIVIDUALIZATION OF INSTRUCTION

CHAPTER III INDIVIDUALIZATION OF INSTRUCTION

As part of the 1971-72 evaluation of the Hempstead DLP, all of the classrooms in the program were observed in September 1971 and April 1972 to ascertain the degree of change in amount of individualization in the classroom. The evaluative instrument utilized for the pre and post measures is the "I" scale. This scale measures within six variables ten polar characteristics of classroom individualization on the basis of classroom observation.

See Appendices C and D for a detailed account of the "I" scale and the Danowski characteristics on which part of the scale is based. For the purposes of minimizing observer bias and teacher anxiety, the observer and the evaluator were not the same person.

Procedures

The twenty-six learning directors of the Hempstead Public School district were trained in September 1972 to conduct systematic classroom observations using the "I" Scale.* Once training was completed, the observers, using the scale, collected data in 117 elementary classrooms. Observations were submitted by each learning director after meeting with an evaluation staff member in order to clarify any possible questions. All classes were observed except those for which the classroom teacher was absent, and no learning director observed a class in his own family.

This procedure was repeated for the post observations held in April 1972, with the stipulation that the observations be randomized and that no teacher would be observed by the same observer.

The Interim report following the September 1971 observations characterized the degree of individualization occurring in most Hempstead DLP classrooms as "superficial at best," and recommended that workshops in classroom management, theory of individualization and practice be inaugurated.

As a result of this report and other inputs the district embarked on a "re-tooling" effort wherein the entire district participated in intensive meetings, planning sessions and in-service training. These training sessions should be perceived as "intervention," in the sense that the district consciously attempted to promote change toward more quantifiable individualization within the district. Thus this section of the report should be viewed as an evaluation of the district's efforts to individualize. The findings are to be interpreted only as relating to the degree of individualization as measured by the

*Gellman, E. and Woog, P., Interim Evaluation of ESEA Title III Project #69-1000: A Model Program, 1970.

"I" Scale and observed in the classrooms at the specific time of the observations. In no way can the results be interpreted as a measure of the amount of "good teaching."

September pre-scores were compared to April post-individualization scores by means of a set of t tests; pre-post comparisons were made per family, per school and for the district. The t test attempts to answer the question: "Were the obtained mean differences found between the two sets of data significant given the variability within each set of scores?"*

In the following analyses this notion of standard deviation as a measure of error should be kept in mind in light of one of the Interim Report conclusions that there was variability among teachers regarding their degree of observed individualization.

Results

A brief explanation of each variable follows:

Variable 1: Large group instruction is not used exclusively.

Variable 2: The entire observation time is not dominated by the teacher.

Variable 3: In large group discussion, the teacher is willing to momentarily divert from the specific prepared lesson to accommodate a student's question.

Variable 4: Students initiate specific learning tasks.

Variable 5: When the class is grouped for instruction, a group or groups are discussing the instructional task without the presence of an adult.

Variable 6: Products of self-initiated student acts are in evidence in the classroom.

Table 16 describes, per variable, the percent of teachers exhibiting any degree of each variable in September 1971 (pre) and April 1972 (post).

*"Variability," or the standard deviation, is a measure of spread of scores. In the t test, spread, as measured by the standard deviation, is construed as error, as this spread was not the result of intervention. If the standard deviations are comparatively great enough, any difference between two means could be the function of this unintended spread, rather than the intended intervention.

Table 16 Percent of Teachers Exhibiting Each "I" Scale Variable: Pre, and Post

Variable	September %	April %
1	78	100
2	89	100
3	11	5
4	19	69
5	22	81
6	9	66

This table shows most dramatically that in no observation did any teacher exclusively use large group instruction or dominate classroom instruction for the entire forty-five minutes. It further shows, as expected, a decrease in variable three, for this variable can only occur under the circumstance of teacher dominated, whole-class instruction. The increases in variables four, five and six suggest a marked increase in the "substance" of individualization.

Table 17 presents a breakdown, pre and post, of the number and percent of teachers per band of "I" scores. If more individualization has occurred there should be a marked increase in band "more than 20" and a decrease in all other bands. A score of zero indicates a total lack of individualization, a score of one through twenty generally indicates a superficial degree of individualization, and a score of greater than twenty indicates that substantial individualization is occurring. This table is useful for a general impression of level of individualization.

Table 17 Number and Percent of Teachers Pre and Post by Band of "I" Scores.

Band of "I" Scores	Pre-September, 1971		Post-April, 1972	
	Number	Percent	Number	Percent
More that 20	15	13	99	90
10 - 20	61	52	11	10
1 - 9	32	27	1	less than 1
0	9	8	-	-
Total	117	100	111	100

This table suggests that a great change toward individualization has taken place. In September, 1971, 13% of the teachers could be

identified as having substantial individualization in their classrooms, while in April, 1972, there was an increase to 90%.

A *t* test was performed for each family, school and district to test the pre-post difference. The table following shows the results of these analyses.

Table 18 t Tests for Each Family and School and the Total District Including Number of Teachers, Means and Standard Deviations for September, 1971 versus April, 1972.

School & Family	September Number	September Mean	September Standard Deviation	April Number	April Mean	April Standard Deviation	t Value
Franklin							
A	4	12.0	8.12	3	28.0	2.65	2.78*
B	4	18.0	2.71	3	28.0	3.61	3.54*
C	4	17.25	6.70	4	25.0	3.74	1.75
D	4	8.5	5.26	4	28.75	2.87	5.85*
E	5	8.8	6.38	4	21.75	7.81	2.42*
F	5	8.8	8.23	5	24.0	8.46	2.58*
G	5	9.0	6.71	5	24.4	4.28	3.87*
Total School	31	11.48	7.06	28	25.43	5.45	8.29*
Fulton							
A	4	12.5	8.89	4	28.25	2.06	2.99*
B	4	5.5	4.36	4	28.5	1.92	8.37*
C	6	12.83	9.28	6	23.0	2.76	2.35*
Total School	14	10.64	8.20	14	26.07	3.52	6.24*
Jackson Main							
A	4	6.25	4.79	4	22.25	2.87	4.96*
B	4	14.75	5.91	4	26.75	2.36	3.27*
C	3	15.0	3.46	3	22.0	3.0	2.16
D	5	7.6	7.13	5	21.8	4.97	3.27*
Total School	16	10.44	6.57	16	23.19	3.89	6.47*
Jackson Annex							
A	5	14.0	2.74	5	24.4	2.79	5.32*
B	4	13.25	3.78	4	27.5	1.29	6.19*
Total School	9	13.67	3.041	9	25.78	2.68	8.45*
Ludlum							
A	6	18.17	5.19	6	24.83	2.23	2.64*
B	7	11.43	4.24	7	26.14	2.91	7.01*
Total School	13	14.54	5.70	13	25.54	2.60	6.09*
Marshall							
A	4	10.75	7.85	2	25.5	.71	2.17
B	5	16.4	6.43	5	24.2	3.19	2.17
Total School	9	13.89	7.25	7	24.57	2.70	3.46*
Prospect							
A	5	19.0	2.65	4	24.0	1.41	3.01*
B	5	22.2	2.05	5	25.2	3.27	1.56
Total School	10	20.6	2.80	9	24.67	2.55	3.12*
Washington							
A	5	7.8	2.59	5	21.4	9.07	2.88*
B	5	16.4	4.04	5	23.6	1.82	3.25*
C	5	9.6	6.54	5	25.8	3.77	4.29*
Total School	15	11.27	5.79	15	23.6	5.65	5.70*
Grand Total	117	12.68	6.79	111	24.87	4.25	16.1*

* $p < .05$

For every school and for the district as a whole, significant differences between pre and post scores were found. Difference in twenty of twenty-five families was found to be significant but this was primarily due to the small number of teachers being compared. Overall, the grand mean of "I-Scores" between the pre and post just about doubled from 12.7 to 24.9. There can be little question that there has been a dramatic increase in individualization within the classrooms as measured by the "I" Scale.

Conclusions and Recommendations

Much progress in the level of individualization within the classrooms was found, in all families and schools. The initial differences among schools no longer exist as was the case in September; post mean "I" scores ranged from 23.2 to 26.1, and standard deviations ranged from 2.6 to 5.7 as compared to the range of pre means, from 10.4 to 20.6, and pre standard deviations from 2.8 to 8.2. On the basis of two administrations of the "I" Scale it can be strongly stated that the measured level of individualization in the Hempstead DLP classrooms has significantly increased.

It is recommended that continued efforts be made in the instruction of individualization techniques for all members of the DLP staff. It is further recommended that the "I" Scale be readministered periodically, after a "cooling-off" period and in as random an order as possible, and that the results be compared with the orginal observations. This strategy can check the possibility that the increase in individualization may be either short lived or due to a special effort extended for the benefit of the observer.

It must be understood that the "I" Scale" does <u>not</u> directly measure the quality of instruction. It is possible that a relatively high "I" Score can be obtained despite the most sterile and primitive learning conditions. It is therefore recommended that the principals and learning directors, with possible outside assistance conduct an intensive content analysis of the quality of instruction and, where that quality is found to be lacking, provide the support necessary to enhance instruction.

Chapter IV

CURRICULUM EVALUATION FINDINGS AND RECOMMENDATIONS

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For the purposes of evaluating the Hempstead DLP, four specialists in Continuous Progress Education were asked to answer questions on the basis of materials sent them on the Hempstead DLP and a similar program being conducted in Evanston, Illinois. In addition, on-site observations of the Hempstead Program were made.

The following comparison study is extracted from reports submitted by:

Dr. Robert Anderson - Professor of Education, Harvard University, Cambridge, Massachusetts (in collaboration with Dr. Barabara Pavan).*

Mrs. Marilyn Golden - Reading Specialist, Evanston Public Schools, Evanston, Illinois.

Dr. Carma M. Hales - Director, Utah System Approach to Individualized Learning, Salt Lake City, Utah.

Dr. James Lewis, Jr. - District Principal, Wyandanch Public Schools, Wyandanch, New York.

The evaluators were requested to answer the questions presented below, prepared by the curriculum staff of the Hempstead School District, and to submit general recommendations:

1. How does the DLP compare to the Evanston Reading material? Mathematics material? Please describe.
2. What are the strengths of the DLP? Please describe.
3. What are the weaknesses of the DLP? Please describe.
4. Does the DLP need modification? If so, describe the desired changes.
5. Does the DLP provide a sequential series of skills which will allow a student to progress at his own rate? If so please describe.
6. Is the DLP material suitable for a multi-ethnic student population? Please describe.
7. Is the DLP organized in a helpful and handy way for teachers? Please elaborate.

*In the body of the report, "Anderson" will be taken to mean Anderson and Pavan.

8. Are the competency instruments adequate to measure the appropriate skills?

9. Are there any general comments or recommendations which you feel would be helpful?

Not every respondent addressed him or herself to every question, and Mrs. Golden did not review the mathematics component of the DLP. Responses will be divided under the nine questions, dichotomized into reading and mathematics components when indicated.

Question #1 - How does the DLP compare to the Evanston Reading material? Mathematics material? Please describe.

Reading

In Dr. Lewis' opinion, both the Evanston and DLP attempt to individualize progress rate for students in reading; however, the DLP is superior in the area of clearly defining skills at each level, and providing a competency check list for the teacher. He considers the format of the Evanston materials to be better defined through a listing of skills from 1 through 30. Although both state student performance behaviorally, the Evanston program provides behavioral objectives, delineating conditions and specific acts, whereas the DLP is stated in behavioral terms, but only lists acts. Omitted from both programs are activities, and a minimal level of acceptable performance. Evanston's teacher manual is superior to the DLP manual, says Lewis, in that it is more informative, better organized and more graphic.

Golden finds Hempstead materials superior in many respects. The DLP has separate level packets including a Teacher manual, Pupil Booklet and Worksheet, easier to handle than the large notebook of the Evanston District 65 curriculum. The latter provides only for individual testing whereas the DLP Competency Evaluation Worksheets made small group testing possible. Individual testing is highly inefficient and time consuming with the District 65 materials. DLP tests can also be administered individually for specific diagnostic purposes. The DLP does an excellent job in selecting a wide variety of reading skills for instruction while the Evanston program does not include quite as many critical thinking and locational skills as the DLP.

Many similarities were found by Golden between the two programs. Both attempt to subdivide reading skills into small, manageable, sequential parts facilitating a systematic method of instruction. Both provide test items, but the DLP offers greater range for a larger quantity of testing material with which to evaluate the student's progress. Both curricula allow the teacher the choice of a variety of educational materials, dictating

no specific methods or techniques. Both facilitate individualization of instruction, making possible innovative reading programs emphasizing self-selection of materials, self-pacing and self-evaluation.

Anderson remarks that both programs are referenced to reading materials published in the early sixties. He cites Jeanne Chall's suggested code-emphasis for beginning reading in "Learning to Read: The Great Debate " Since that time, Anderson says, many reading programs have been developed on a "decoding" and/or linguistic basis.

Mathematics

According to Lewis, the DLP is simpler and, therefore, more likely to be used. The DLP has fewer pages, with all objectives on a given level listed on one page. In comparison, finding an objective in the Evanston material might take five minutes, and teachers are not prone to use materials requiring that amount of time to locate information. Lewis found the DLP objectives to be more refined than Evanston, devoting three objectives to a concept to Evanston's one (see fractions, Level 1 of DLP, and Level IV of Evanston materials); the more refined the objectives, the greater the chance for student mastery. Although Evanston is making an attempt, albeit a feeble one, to refine methods of guide implementation, they do not provide a post test (and a diagnostic test) which is provided in the DLP. Behavioral objectives, as described in standard texts, need to be more fully developed in both programs.

Anderson offers the following comparison between the Evanston and DLP mathematics materials:

a) Although the Evanston mathematics program is printed on two to three times as much paper, it does not contain a great deal more material than the DLP leaving many blank spaces to be filled in with teachers' suggestions. Since the Evanston program is difficult to work with due to its weight and bulk, it might be more useful for teachers to insert a looseleaf page of another color when adding teaching suggestions.

b) The Evanston program arrived in cumbersome looseleaf binders, while it was a simple matter to hole-punch the DLP mathematics materials and index them in a binder.

c) It is easier to understand what is expected of a pupil at each level of the DLP than with Evanston materials since the pupil check sheet for each level is the index for that level. The items on the competency evaluations are numbered to correspond to the pupil check sheet. The Evanston program has a Concept Cue Chart (1-2) indicating the topics included at each level with "x's." This overall summary chart, therefore, will indicate that Roman Numerals (Concept Cue 4) are studied in levels X, XVI, and XVIII, but it is then necessary to leaf through all those levels to find the behavioral objectives studied.

d) The DLP lacks an overall index and Evanston lacks an index by levels. The DLP was completed during the summer of 1971 and refers to the most current mathematics texts. The Evanston program, written during the summer of 1968, refers to textbooks published in the early sixties. The DLP gives textbook sources of teaching materials for each behavioral objective on Levels XV-XXV (revised), while Evanston includes textbook sources for nearly every behavioral objective. The teachers manual of the DLP suggests that mathematics activity packages will be developed for Levels I to XIV.

e) Evanston textbook references are made to any one of four different series when appropriate; the DLP contains references to only two basal series. The real issue is not so much whether the texts are referenced, but whether they are actually available in sufficient quantities in the classroom.

f) Evanston divides each year's work into three or four levels while the DLP divides it into five or six levels. The Evanston levels seem to correspond to the four traditional "marking periods" while the DLP fosters the completion of a level in a shorter time--six weeks vs. about 10 weeks for each Evanston level. The DLP is organized under eight topics (three or four on each level) and a pupil may strive to master the objectives contained within each of the topics at that level. The Evanston program is organized under 38 concept cues with a small percentage to less than 50% presented at each level. The shorter time units and the reduction of topics within each level of the DLP would appear to offer greater frequency of student success and a corresponding enhancement of self-concept through increased mastery of topics.

g) Both programs are remarkably similar, consisting of a set of behavioral objectives for each level and a text for each level containing one test item for each behavioral objective. Both programs need organizational additions; updating textbook materials and/or additional references, and the inclusion of a post test for each level.

In Anderson's judgment, both are good programs, with the capability of contributing significantly to the provision of individualized instruction for Hempstead children, but both require supplementation to be truly helpful to teachers. However, Anderson feels that since the DLP makes use of more current materials in terms of copyright dates, and is the product of local personnel with considerable knowledge of and commitment to the DLP unlike the Evanston material, it is the better program to pursue in Hempstead.

Question #2 - <u>What are the strengths of the DLP? Please describe</u>.

Hales feels that Hempstead has the nucleus for an excellent program; the DLP curriculum materials are based on a strong organizational structure, and the parameters for study are identified in a conceptual framework. The concepts are further organized by difficulty levels which permits teaching and learning for mastery within specifically conceived parameters. Anderson views as a major strength of the program Hempstead's belief that instruction must be individualized.

Reading

Golden finds that test items are well-written and comprehensive. The large number of tests provided at each reading level give specific information about students' needs. There are good individual Mastery Skill records, allowing the student to be in charge of his own learning (with long-term goal skill charts). The program is easy to administer using the teacher guide. The teacher can easily locate needed curriculum information which is manageable and well organized. Responsibility is with teachers and adminstrators, and they become accountable.

Lewis says that although the reading program is inadequate, an initial step has been made. A concise overview is provided for an articulated elementary reading program, and a continuum of evaluative measures are available.

Mathematics

The development of the program by a teacher panel and the district mathematics coordinator is viewed by Anderson as a strength. He writes that once placed in a loose leaf binder, the program is easy to use. The teacher manual is coherent, and contains lists of manipulative materials, prices and supply houses, and suggestions for pupil mathematics folders. The manual only needs some additions to made it a more useful teaching aid.

Lewis feels that the DLP is simple to use, allowing teachers flexibility in use of the guide, and ease in individualizing objectives for each child.

Question #3 - What are the weaknesses of the DLP? Please describe.

Reading

Lewis cites the following areas needing improvement: the format should be made more attractive to students: there is a lack of background information about the nature of the reading process, which should be made available to teachers. A more systematic approach to the reading materials is needed... no instruction is provided for evaluation of results...the provided activities are the same as the evaluative measures, thereby invalidating the tests instrument....format is not conducive to individualized learning....limited activities are provided for each skill so that not enough reinforcement is provided (at any level) to motivate slower students....there is no focused graphic representation of pupil progress....behavioral objectives are concentrated on lower thought processes....some of the units are teacher oriented, and teacher involvement diminishes the value of the concept of self-directed learning....no provision is made for the use of audio-visual

materials. The following reading skills are omitted: 1) gross and fine motor coordination; 2) perceptual skills, i.e.,body image, directionality and visual and auditory memory; telling stories and events, written correspondence, literary program and library skills; 3) language development, i.e.,if-then statements, attributes, contrasting and comparing.

Anderson found the reading program to be generally less adequate than the mathematics program, and pinpoints the following problems: diagnostic testing is overly time consuming; not enough time is given for adequate lesson preparation; materials are inadequate; DLP behavioral objectives don't correlate well with other basal reading lessons.

Golden feels that there is a need for recognition of children needing a specific skill at each level. A chart might be used listing all skill categories across the top, with a place for 3 entries at each skill, with names of students on the left side, vertically. Another alternative suggested is the card sorting system in which a hole is punched in a card indicating a skill for all the students in the class. Those cards falling off are not punched, indicating students needing work on this skill. She further indicates that phonetic skills are introduced late, and that a class group diagnostic test is needed to determine starting level. She cites as current practice the earlier introduction of auditory reading skills, teaching vowels within the first year of reading instruction. Postponing vowel study, says Golden, until Level 6 may handicap some students (see Scott Foresman, Houghton Mifflin basic readers).

Mathematics

Lewis expresses the view that objectives are spelled out but methods of implementation are not. Teachers are not supplied with follow-up information and too much is given too soon. He doesn't think that objectives for fractions in all 25 levels could be reached by a fifth grader during such a short time span.

Anderson found Item 6, under General Suggestion to Teachers (Teachers Guide, pg. 10) to be the only item in the program on whole-class teaching. He suggests that review work should be done only after a thorough mastery of concepts used in each operation. Review could be done with commercial or teacher-made games instead of "daily drill," which can be dull and deadly. Rather than factual daily drill with the whole class, a five to ten minute mathematics game period should be allowed for small groups to work together, e.g.,at the end of the mathematics class. Flash cards when used with the whole class can prove to be a traumatic experience.

Question #4 - Does the DLP need modification? If so, describe the desired changes.

Hales offer the following suggestions for modification of the program:

a) There are some instances in which the material would probably be more palatable to learners if the overall page were not so crowded. It would be well during revision cycles to have an artist or team

of artists rework the format.

b) There should be individual pupil kept record sheets and teacher records to validate where a child is at any point to help insure teaching for mastery and build pupil responsibility and independence.

c) Both math and reading materials could be interfaced with curriculum materials available in the district with the inclusion of a revision schedule for "debugging" any faulty materials.

Reading

Lewis states that some modifications are needed and other means for individualizing the program should be considered. The instructional program should be keyed to units such as a mini book, individualized learning instruments, educational technology, the use of tapes for students reading three or four grades below level and those reading on primary level, etc.

Hales believes there is more room for development of comprehension skills. Other skills are important but "unless we over teach comprehension we tend to develop 'decoders' who do not read for meaning." Thus, she suggests that meaning be stressed, and as the program is developed, interesting experiences be built in.

Golden recommends revisions be made after the curriculum has been used over a period of time. The child would need the following untaught skills for success in reading. (Levels 2 and 3)

Level 2:

1. Copying. Ability to copy reinforces visual image of the word.
2. Visual memory. Ability to remember how a word looks and recognize it.
3. Recognition of letter sequences. Importance of understanding left to right order of progression in identifying words. Teaching should begin with matching and ordering in two letter words, then sequentially to five or more letter words.
4. Letters in space; teach discrimination of confusing letters, such as b-d, t-f, n-u, p-d.
5. Perceptual constancy. The ability to recognize the same words in different contexts.
6. Auditory skills; hearing, seeing, saying and writing consonant sounds.
7. Visual discrimination can be taught in smaller sequential steps, beginning with one letter matching and discrimination, thereby developing the ability to learn through a whole-word approach.

In word attack skill #6 (expectation is alphabet name mastery) stating names of upper and lower case letters is very difficult for young children and doesn't help in learning to read, nor does it facilitate word recognition. (Letter-sound training, on the other hand, does help.) Letter name knowledge would be best postponed for later levels and more emphasis should be given to instruction in letter-sound associations.*

Level 3:

1. A sample vocabulary list of 25-50 words might be helpful to the teacher. The Competency Evaluation only directs the teacher to test the student on the recognition of 90% basic sight words (presented to date). Other levels might also benefit from a sample vocabulary list. (Appendix E)

2. A group test is needed at this level (DLP only includes an individual test). It would be easy to construct a group test adapted from materials already written for this level. A group test would allow more efficient use of the teacher's time.
3. Children should acquire the skill of reading manuscript writing very early. It might be an appropriate skill to include in the reading curriculum.
4. Writing and reading are closely related and should be taught together. The kinesthetic and tactile learning experience can reinforce the visual and auditory learning experience.

Mathematics

Hales asserts that early mathematics experiences need to be firmly built on a foundation of concrete experience. Handling symbols alone leads to rote recall with ensuing difficulty in application to actual events. It would be well in most instances to include some form of application to real events before concept mastery is accepted.

Anderson recommends the following modifications: Punch holes in all materials and arrange them by levels in a loose leaf notebook for each elementary teacher. Provide release time or extra compensation for a Saturday teachers' workshop so that levels from 1 to 4 may be referenced to the 2 basal textbooks as revised levels 15 through 25 have been. This could be done in several hours by 28 teachers, with each referring one basal mathematics text for one level. Each teacher would need a pupil check sheet for the level, and the teacher's edition of the basal text being referred. Order games for fact mastery for each classroom or set

*Samuels, S.J. "Research. Word Recognition and Beginning Reading" (Nov. 1969); The Reading Teacher.

Samuels, S.J. "Letter Name Vs. Letter Sound Knowledge in Learning to Read" (April, 1971); The Reading Teacher.

up a mathematics resource center in each school from which teachers can borrow materials. Inventory each teaching area to ascertain whether teacher manuals for two mathematics series references are available on needed levels, and that adequate pupil texts have been provided. Prepare a chart indicating mathematics topics to be presented on each level. (See Appendix F.)

Prepare a pre-test for each level. This should be similar to the post-test but contain different items. Each topic for each level of the pre-test should be printed on a different page. This will then form the first part of pupil activity packages to be developed. Then prepare complete activities packages for each topic on each level. This will give the District the capability of a truly individualized program. The New Mifflin series, "Modern School Mathematics," by Duncan, Copps, Dolciani, Quast and Zwerg includes a differentiated assignment guide which might provide a model for using a basal text in individualized fashion.

Lewis gives the following suggestions for modifying the mathematics program:

1. Provide in-service training for individualization, placing emphasis on practical implementation of the program.
2. Space out objectives over a longer time span to more realistically reflect what children can actually learn.
3. Provide a mandatory evaluation of the curriculum guide by teachers and students.
4. Competency evaluations should have more than one example for each objective.

Question #5 - Does the DLP provide a continuous series of skills which will allow a student to progress at his own rate? Please describe.

According to Golden, skills are introduced logically and adequately. Word attack skills tend to have more sequential development which is harder to determine for comprehension skills, i.e.,the same comprehension skill may be taught on several levels while increasing the level of complexity. Curriculum specialists only need to agree on order. A wide variety of reading skills have been selected. Perhaps a hierachy of skills from simple to complex, common to less familiar, can be listed in such areas as contractions, abbreviations, prefixes and suffixes, to help in planning instruction.

Anderson expresses the view that while DLP provides a continuous series of skills, the pupil's individual progress rate is hampered by need for teachers guidance on a daily (or more frequent) basis.

Lewis agrees that too much teacher time is required to conduct the program. Although skills progress, the student still needs a good deal of guidance. Unless the student is given printed instructions and guidance,

the teacher will have to find time to direct each student individually to the learning materials, and to provide reinforcement for specific skills. To progress at his own rate, the student must be motivated to learn, and the material does not appear to provide sufficient motivation for continued progress. Library arts, literature and language arts are omitted.

Question #6 - Is the DLP material suitable for a multi-ethnic student population? Please describe.

In Lewis' view the DLP is not relevant to the realities of a multi-ethnic student population, which to some extent substantiates his conclusion that the DLP was developed either by a group consisting of no minority members or from materials lacking any reference to minority students. This seems to hold for both reading and mathematics.

Reading

Anderson agrees that very few or none of the materials referenced in the DLP appear to be designed for a multi-ethnic student population. He finds them mainly suitable for white, middle class, suburban children. In contrast the DLP was found by Golden to be suitable for a multi-ethnic population with no biases evident in the reading curriculum. Ideally, teachers will guide instruction with particular sensitivity and understanding of the needs of a multi-ethnic population and reading skills will then be developed for the population as a whole.

Mathematics

According to Anderson, most recent texts make some effort to include multi-ethnic illustrations. (The mathematics text used as a reference was in the integrated series published by Addison-Wesley.) However, this is less crucial in a mathematics text, as most illustrations don't include people.

Question #7 - Is the DLP organized in a helpful and handy way for teachers? Please elaborate.

Golden finds that the DLP is organized in easy-to-use form and the teacher can easily locate any curriculum information needed. Anderson asserts that once hole-punched, arranged by levels, and put into binders the DLP is well organized, but problems particularly in the reading area still remain; i.e., diagnostic testing is overly time consuming, not enough time is allotted to prepare for adequate lessons, and materials are inadequate.

Question #8 - Are the competency instruments adequate to measure the appropriate skills?

Within each level according to Hales, assessment instruments have been constructed to determine learner competency. These are generally short and straightforward in design. However, their validity cannot be fully determined until they have had pilot testing with learners. While the need to know where pupils are on a learning continuum is obvious, whether or not learning is organized in a specific hierarchy is not as important as the fact that it is organized, and the objectives identified are actually tested or taught by the curriculum materials devised.

Reading

Test items evaluating skill mastery are of high quality, and accurately measure the student's reading skill competency, according to Golden. The teacher receives specific information of the student's needs through the large number of tests provided for each reading level. She found DLP evaluation instruments easy to administer using the Teacher Guide, with curriculum tests helping teachers to become accountable for the extent to which the reading program serves children in the mastery of reading skills.

Anderson indicates that the instruments do measure appropriate skills, but not much better than teacher judgment before the use of instruments. He observes that each level takes about an hour to administer to each child, and does not seem to be a judicious use of instructional time.

The materials are seen by Lewis as beginning steps in the move toward a continuous progress curriculum. Although the competency instruments will to some extent measure mastery of skills, there is a need for further refinement by providing additional criteria, and by indicating a minimal level of acceptance standards. In most instances, commercial materials (i.e.,Individually Prescribed Instruction) are found by Lewis to be superior to the DLP with the latter lacking materials to adequately meet the individual needs, talents and interests of a multi-ethnic population.

Mathematics

Anderson believes that the mathematics instruments will become adequate once other instruments are devised for pre-testing. He found one or very few items for the evaluation of each behavioral objective. However, complete mastery of all items on each level is not expected, due to the spiral construction of the curriculum.

Question #9 - General comments which you feel would be helpful.

Hales indicates that although the DLP materials are well conceived, they are somewhat shallow as a total program and would need to be refined

for wider use. Viewed as diagnostic-prescriptive evaluative devices, however, they are very well done. From her experience, the most significant drawbacks might stem from the lack of ability or desire on the part of teachers to use the materials. Others have found that utilizing a simplified version of conceptual schemes with extremely simple record keeping devices are the most effective initial installation technique, and then complexity is increased as learners gain expertise.

In Hale's view, the DLP materials are specifically designed to teach an invariant property, in keeping with the principle that all learning is incremental. Considerable feedback from teachers should be harvested to determine how well a specific experience "works" with learners. Hales feels that in an attempt at precision, some of the materials in isolation appear to be sterile, but it is hoped that the creative teacher will use the curriculum as a valuable instructional tool, not as a total program.

Golden offers the following suggestions:

Set a reasonable time goal to achieve skills....With the breakdown of traditional graded standards of achievement, teachers need some time guidelines for completion of skills. Agreement must be reached among teachers using the curriculum as to how much time is needed to master each skill level. This time limitation should be very flexible, but teacher and student should both be aware of a reasonable time to achieve the skill goals. Otherwise, teachers may tend to scale down their own requirements and lower student expectations.

A teacher developed resource file containing duplicates of workbook pages for teaching specific skills would be most helpful. The DLP has an excellent and well-organized listing of workbook page numbers for Levels 13-15 providing practice in specific skills. These worksheets could be placed in a central file accessible to all teachers together with a listing of concrete activities, games and audio-visual materials.

Only when teachers thoroughly understand the curriculum and accept it as a needed improvement, will they be eager to initiate a program requiring great effort and work. Teacher workshops should be used to gain acceptance of the program and provide an understanding of how to implement the curriculum in the classroom. Participating teachers should cooperate in selecting, developing, and writing learning materials. They should receive instruction in innovative techniques, methods, and materials to be chosen for their classrooms. Participants should work to define problems and agree on objectives to successfully implement the DLP reading program by forming teams, dividing responsibilities, and discussing plans for classroom restructuring. Teachers should receive training in the use of evaluation instruments for making decisions. Plans should

be made for a continuous evaluation process for the improvement of classroom instruction and for problem-solving purposes.

Regular meetings should be scheduled during the year to discuss problems and find solutions. At these meetings, participants will have the opportunity to suggest curriculum improvements, make revisions, seek help and guidance, share ideas, and air negative feelings. As teachers are allowed to choose their own approaches to reading instruction, they should have the guidance and support of a reading supervisor or master teacher with meetings at regular intervals to discuss problems, set objectives, and evaluate their classroom program.

Anderson is of the opinion that this is basically a good program, with the capability of contributing in a significant way to the provision of individualized instruction for Hempstead children. However, he feels, to make effective use of the DLP, it would be necessary to up-date and revise all referenced materials, including those used for competency evaluation. This would require almost complete program revision employing a half dozen people for several summers. For the program to be more truly helpful to teachers, materials and activities are needed for each behavioral objective ideally to be generated within the Hempstead school system. Materials already produced by the Hempstead personnel afford ample evidence that this can easily be done and participation in this process of supplementation should itself develop greater staff expertise and commitment. The foundation is a solid one and with the involvement of local staff in a substantial manner, one could expect the program to become increasingly vital and effective.

Anderson offers the following recommendations for development of Hempstead's own reading package:

Many new basal reading programs have been published and/or are in the process of publication, which emphasize decoding in the primary years. Most are multi-ethnic suitable for urban or semi-urban situations and labeled by level rather than by grade. They are often written with such interesting stories, pictures and activities that older children can enjoy the lower level materials. Some are programmed, and some are in booklet form readable in a day or a week (rather than hard covered books used for a year or a semester). One program, still in pilot form, utilizes local newspapers for its text.

Participating teachers should carefully study newly published reading series and select two or more to be readily available for each child. One of these series should emphasize decoding (possibly of the programmed type) and one should be of the more standard "phonics plus sight vocabulary" style, but suitable for the local student body....An adequate supply of library books and paperback books should be ordered

for each classroom to enhance an individualized program. Games, audio-visual and manipulative materials should be used in the reading program. Thus, four major alternative routes to reading are available for each child: 1) decoding and/or linguistic program, 2) standard but non-basal reader, 3) individualized reading, 4) touch and hearing emphasis.

No teacher can provide these alternatives without adequate materials, and the program cannot operate without recognition of the need for sufficient additional funds in the reading budget for next year. Reading materials are costly and should be selected wisely. A careful allocation of funds should be made for each of the four categories indicated.

The above recommendation applies in general only to the primary or early elementary years. Once the majority of reading skills have been developed, need for a basal reader or reading series is greatly lessened. For the older child an even wider selection of library and trade books should be available. Additional needed skill materials can be found in spelling and/or language arts workbooks. Study and research skills are suitably taught within a social studies or science project. The Intermediate teacher may also wish to develop some activity packages for reading similar to those we suggested in the Mathematics section of this report.

In summary, many of the new reading programs are of excellent quality, especially when used for individualized rather than whole-class instruction. We have therefore suggested adopting at least two of the recently published series (one with decoding emphasis) to be used in the primary years, plus the purchase of trade books, games, and records or tapes with accompanying books or worksheets, to accommodate a variety of learning styles. In this way, Hempstead can put together its own reading "package" in a very short time.

Lewis offers the following suggestions and recommendations for designing and developing a continuous progress curriculum.

Within local and state regulations instructional staff or the faculty of each building should make decisions about all the components of the continuous progress program. Each teacher should be involved in making important decisions about the program.

The building staff should cooperatively design and execute the continuous progress educational program through the following primary activities: a) develop and clarify instructional objectives, b) develop and use appropriate measurement tools and evaluation procedures, c) motivate children, d) supply models to imitate, e) select and sequence subject matter properly, f) arrange appropriate learning activities including use of materials and equipment, size of group, etc., g) guide initial pupil effort, h) manage practice and activity effectively, i) aid children to apply and use newly acquired knowledge, skills and attitudes.

The instructional staff of the building, with expert consultation, and within local and state regulations, should select content and arrange sequence on the basis of such criteria as knowledge of the discipline, difficulty of the material for children, relation to future and current study, and relation to out-of-school activities. Appropriateness of content and sequence for each child should be based on continuous assessment of performance.

Instructional objectives and learning tasks should be designed for each individual based on his entering behavior and characteristics.

Large, nongraded learning units should be composed of 75-150 children, a team leader, other certified teachers, and paraprofessionals.

Vertical organization should facilitate each student's continuous progress. Horizontal team organization should permit maximum flexibility in placing each child in an appropriate learning activity capitalizing on the capabilities and personal characteristics of each member of the instructional staff.

A continuous progress curriculum should contain a sufficient number of components so that it can truly serve as an instrument fostering progress in education through the individualization of instruction. The curriculum design must be broad enough to permit the student maximum opportunities for success with minimum assistance from the teacher. The teacher might also be called upon to assist students with learning problems in another unit.

Lewis gives the following essential components of a continuous progress curriculum: (See flow chart Appendix G)

1. Rationale: Nothing must be left to chance in the continuous progress unit. The student should be informed of what he is to learn and why it is important for him to learn it.

2. Behavioral objectives: The expected behavior should be delineated in observable terms. It is recommended that objectives be constructed to include the following three components:

a) It should be stated whether the instrument will be used to evaluate behavioral objectives already achieved, or describe the learning environment in which the learning will take place.

b) Expected behavior should be stated in observable terms using action verbs such as to write, to stimulate, to delineate, avoiding such terms as realization and appreciation.

c) Minimum standards expected of the child in order to substantiate achievement of the objective should be clearly indicated.

3. Pre-test: Achievement tests or other diagnostic procedures should be developed to assess the child's entering behavior and readiness for each learning task or set of related learning tasks. The pre-test questions should be developed immediately after formulating the behavioral objectives and related to them. If there are several "interim" behavioral objectives associated with the main objective, it might be wise to develop pre-and post-test questions for each interim objective, as well as for the main behavioral objective.

4. Learning activity options: This component of the curriculum makes allowances for differences in student ability levels, skills and interest patterns. Students can not only select learning activities or particular interest to them, but also those calling for group cooperation. In these cases, each option has a role or level designation appropriate to the grouping procedure previously arranged by a team of teachers.

Instructions should be clearly stated, with units either typed or printed in an appropriate type size, according to the level of difficulty, i.e., a larger type face should be reserved for lower grades.

The following are the three basic components of the learning activity options section of the continuous progress curriculum:

a) Content: Moderate emphasis should be placed on skill mastery, acquisition and recall of factual information; greatest emphasis should be placed on concept information, application of skills and concepts, creativity, and the evaluation of information.

b) Multi-Media: A large variety of printed material- textbooks, supplementary textbooks, programmed material, library books, and unit materials - should be adopted system-wide. From these the building instructional staff should select appropriate materials for each child.

A large quantity of audio-visual material - films, sound tapes, video tapes, slides, recordings, etc.- should be kept within each building. Other materials should be distributed from a central location (preferably, the learning resource center).

Relevant equipment - audio, visual and audio-visual - should be available for presenting and receiving information. Integrated systems should combine and coordinate the use of various materials and equipment: e.g., language laboratory, multi-media center.

c) Multi-Mode: Students should participate in one-to-one, small group, class-size and large group activities to achieve clearly specified school goals and individual child objectives. These

activities should proceed at a rate suitable for the achievement of social and other objectives in the cognitive, affective and psychomotor domains.

Each child's time should be allocated in terms of his instructional objectives. Variations should exist among children in the amount of time spent in connection with subject fields and also with respect to one-to-one, small group, class-size, and independent study activities.

5. The self-assessment test differs from the pre-test in that it asks two or three questions of a general nature permitting the student to check on and evaluate his own progress as he proceeds through the learning experience. These tests are usually located within the various learning options.

6. Evaluation (post-test): If the student is successful in completing the post-test (as identified by minimum standards in the behavioral objectives), he then seeks assistance and further advice from the teacher. They may discuss in depth some area of importance or the teacher may give the student a different unit to proceed through. After successfully completing the post-test and before going on to another pre-test, he will complete the student evaluation form indicating his reaction to the unit.

Standardized and teacher-developed tests and procedures should also be used frequently to assess each child's progress and to provide informative feedback.

Measurement tools and evaluation procedures should be used continuously to improve both the instructional system and the individual components of the program.

SUMMARY

The four evaluators offered a wealth of excellent suggestions for maximizing the effectiveness of the Hempstead Directed Learning Program. The reader is referred to the body of this section of the report for specific details of suggestions and recommendations. Summarized below are some of their most salient observations.

It was generally agreed that the reading program is in need of greater supplementation and refinement than the mathematics component of the DLP. More stress might profitably be given to linguistic programs developed on a decoding and/or linguistic basis. In terms of the overall program, it is recommended that provision be made for continuous evaluation and subsequent revision of the curriculum when necessary. Still in its infancy, further validity studies will be needed to determine the degree of success with which the program is operating. Careful allocation of funds should be made for required program revisions, for supplementary audio-visual materials, additional books (particularly the latest, most relevant paperback books) and the establishment of learning resource centers. A need was also indicated for specially designed pre-test questionnaires to determine more accurately the learning readiness level.

Although format was considered to be less important than actual sufficiency of materials in the classroom, materials were found to be generally easy to work with when hole-punched and inserted in notebooks. Teachers are provided with a variety of educational materials facilitating individual instruction, with pupil self-pacing and self-evaluation. However, the materials were found by half the evaluators to be inconsistent with the hypothesized objective of suitability for a multi-ethnic and/or urban population, being more directed toward middle-class white children. The mathematics materials were not found to be as deficient in this regard, partly because pictures of people are less prevalent in mathematics textbooks. Choosing and developing more pertinent materials for the target population would be indicated. The materials are seen as beginning steps in the development of a continuous progress curriculum and the teacher is urged to use them as a valuable instructional tool rather than depending entirely on the written program.

The accountability of teachers and administrators for the implementation of the DLP is seen as a strength of the program, and their full involvement and enthusiastic participation are vital to its success. Maximum benefits of the program can only be achieved through total teacher involvement, from program construction through implementation and evaluation. Teacher workshops and in-service training were seen as highly effective methods of developing teacher involvement. Teacher time could be more effectively utilized through the use of comprehensive, sequential printed instruction, allowing the child to work with greater

independence, and through increased use of group tests. The teacher, less involved in the minutiae of program administration, can then be free to use classroom time as a counselor and guide in the learning experience. There should be continual dialogue between teacher and student regarding individual learning goals and the best means to achieve them.

In conclusion, the four evaluators found the DLP to be a commendable program with significant and worthwhile goals. However, much work remains to be done to broaden concepts, further refine objectives and facilitate administration of the individual components of the Directed Learning Program.

Chapter V PARENTAL OPINIONS

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Introduction

Based on last year's recommendations by the Board of Education, a different approach was taken this year in gathering information from parents on the DLP. Rather than simply mailing questionnaires to parents, a team of evaluators from the Teaching & Learning Research Corp. attended parent meetings in each of the schools. Parent questionnaires were distributed (Appendix H), filled out, and collected at the beginning of these meetings. This was followed by an open discussion of the DLP. Each parent comment was recorded. It is felt that the three methods of gathering information -- 1) responding to questionnaire items, 2) adding written comments to the questionnaire, and 3) discussing the program-- comprise a more comprehensive and thorough attempt at data collection than had been previously attempted. This assumption was borne out, since frequently the topics covered in discussion differed from questionnaire items or written comments. Despite the fact that all parents were notified by the schools, relatively few parents attended these meetings. Principals generally felt that, had these parents had adverse feelings in regard to the DLP, they would have attended the parent meetings.

Parent Responses to Questionnaire

I. Findings

Question #1: How many years has your child been in DLP?

Of the parents responding to this questionnaire approximately half had children in the DLP for three years, while roughly one fourth had children enrolled for two years and 22% for one year. A few of the parents completing questionnaires did not respond to this item.

Question #2: Do you think your child has learned more since being in DLP?

67 (53%) of the responses indicated parents felt their child had learned more in DLP. A substantial number of parents, however, were not sure of the program's impact on their child's learning.

Question #3: Does your child look forward to going to school more since being in the DLP?

Almost half of the parents perceived a more favorable attitude on their child's part toward school with DLP. 21 (17%) responded negatively and 23 (18%) were not sure. 22 (17%) of the parents did not answer the item.

Question #4: Would you like your child to participate in DLP next year?

About two thirds of the responses were positive, with 79 (63%) parents wanting their child to continue in DLP. Although only 7 parents (6%) responded negatively, 22% did not respond to this question.

Question #5: Do you feel your child's teacher helps your child to learn?

Well over three fourths (84%) of the responding parents felt the teacher helps their child to learn.

Question #6: Do you feel there is enough attention given to the contributions of Black and Spanish speaking as well as white citizens?

On this question 38 parents (30%)responded "yes" with an equal number "no" responses and 40 (32%) not sure, with results varying considerably from school to school.

Question #6A: Are there enough materials regarding Spanish speaking and Black people?

Almost half of the respondents failed to answer this question. Of the remaining 53% only 8 parents (12%) felt such materials were in adequate supply, while 28 (42%) and 31 (46%) respectively answered "no" or "not sure."

Question #7: Do you think the DLP helps children of different backgrounds and races work and learn together?

Almost all parents answered this question and more than half responded positively.

Question #8: Do you feel the DLP treats children as individuals?

Over three fourths of the parents (100, or 79%) thought DLP did treat their children as individuals.

Question #9: Parent comments added to Questionnaire

Findings

Written comments seemed to fall into two main categories: 1) operation of DLP within the classroom, and 2) the administration and organization of the DLP.

64% of the comments were concerned with DLP's operation in the classroom. The most frequently mentioned classroom concerns focused on the structure of instruction with 14% of the comments calling for changes in methods of grouping or alternatives to the program itself: with 12% requesting more individualization and 2% asking for more and different kinds of grouping, including academic mixes. At the same time, one parent called into question age-mix practices. This information was difficult to interpret, as there seemed to be considerable confusion about what individualization means: i.e.,one adult working with one child at a time, or prescribing experiences for children; small

or large groups or one-to-one on the basis of their individual needs. At any rate, some parents didn't seem to feel that classroom work was individualized.

The two next most frequently expressed concerns with classroom operation involved materials and the adult-child ratio. 12% of the parents wanted more materials, especially audio-visual and manipulative ones, to be delivered in the early fall of 1972.

12% of the parents were concerned that the adult/child ratio in the DLP was inadequate. To decrease the adult/child ratio, three suggestions were made and are presented here in order of frequency: 1) hire more aides (5%), 2) make classes smaller (4%), and hire more teachers (3%).

The third most frequently mentioned area of classroom concern revolved around curriculum content, with 11% of the responses wanting the curriculum improved or broadened in some way. More emphasis on Social Studies and Science was desired by a few parents. Some parents wanted Spanish and art added to the curriculum, while one parent requested more emphasis on basic skills and another wanted more classroom instruction on Spanish speaking and Black people. One parent also asked for more homework.

The fourth largest classroom operation concern involved the issue of teacher-directed vs. child-directed learning activities. 6% of the responding parents felt that teachers should be more directive, while 2% felt the teacher should be less directive.

One parent was unhappy with the way a child's achievement is reported and wanted to return to achievement reporting in grade levels.

In addition to comments about classroom operation, 37% of the responses indicated that the second largest area of concern is the administration and organization of the DLP. 9% of the responses called for improved communication between parents and the program, especially in providing the parents with information, and 7% additional responses expressed a need for more parent involvement, especially in program planning. The concern for information and involvement was expressed by parents at most schools. Another 5% of the responses indicated that some parents feel the program is a good one, but isn't being adequately implemented or coordinated according to the original design.

Some parents seemed most concerned about all three issues, while a few parents felt that better staff selection procedures were needed. 80% of the comments on staff training urged better teacher training, and 20% felt that better paraprofessional training was also needed. It was suggested that the "stronger" teachers be given more incentive to become learning director and that teachers and learning directors

be given more authority and freedom. One parent cautioned the evaluators not to make hasty judgments as he felt it takes 5 years for a program to be thoroughly implemented.

In summary, of the 101 responses on parent questionnaires, 64% expressed dissatisfaction with classroom practices and 37% were concerned with problems of program administration and organization. Table 19 shows: 1)number of parents present who filled out questionnaires, 2) the number of parents who added written comments.

Table 19 Number of Parents Who Completed Parent Interview Questionnaire and Number of Written Comments.

	Number of parents present and filling out questionnaires	Parents making written comments
Franklin	13	8
Fulton	13	3
Jackson	34	27
Ludlum	4	3
Marshall	23	16
Prospect	19	4
Washington	18	5
Total	124	56

Differences between questionnaire responses and comments made by parents at the meetings

1. Parents seemed to be more interested in asking questions about the DLP, than giving their impressions about it. Written comments less frequently indicated a lack of information and communication.

2. Concern about the politics of administration and implementation of the program were most frequently expressed orally at parent meetings.

3. Written comments focused more on classroom operation while oral discussion focused on administrative and political concerns and feelings of powerlessness.

4. Written comments were more frequently positive regarding the program. Discussions seemed to evoke more recognition of pros and cons.

5. In some schools there was a considerable difference in the amount of information received from parents during the written comment or open discussion time.

Summary

1. While most Hempstead parents are in favor of the DLP, parents at different schools expressed varying degrees of satisfaction with the program. This would suggest that at each of the schools there are unique problems as well as assets in implementing a change in teaching and learning practices.

2. A great deal of confusion exists about what "individualization" means. This confusion is shared by parents and school staff. Continued efforts at communication are necessary.

3. Many parents feel that materials should be more diversified and abundant.

4. Some parents were concerned about the competence and training of the staff and the adult/child ratio.

5. Some parents feel the curriculum should be broadened or improved, perhaps adding more science, art, social studies and Spanish language instruction.

6. The degree of directiveness vs. nondirectiveness exercised by the adults in the classroom was of special concern.

7. Despite the efforts of the schools to communicate with parents about the program, many parents still feel uninformed and powerless.

8. In some instances, parents heavily favor the program, but feel that it is not being implemented sufficiently.

9. Once parents felt informed about DLP, their general reaction to it was supportive.

10. The parents appear to be more willing to support teachers and administrators who:

    a) have warmth and feeling for the children.

    b) are conscientious, knowledgeable and well prepared.

    c) take pride in their profession, but also respect parents' ideas and feelings.

    d) like to develop better procedures for learning and teaching.

Recommendations

1. Schools should continue their efforts to involve and communicate with parents regarding DLP. Perhaps meetings in parents' homes would be an alternative to school meetings and brochures. Inventiveness should be used in exploring this issue.

2. For those parents who cannot come to school to visit their children's classes during the day, perhaps videotapings of DLP in classroom action could be shown in the evenings.

3. The reasons for the negative feelings about DLP at some schools should be explored further.

4. A wide variety of materials--audio-visual, manipulative, inter-ethnic--should be promptly delivered to each of the schools.

5. The comprehensiveness of training procedures for teachers and educational assistants should be explored and wherever possible, joint teacher/educational assistant training procedures be employed.

6. Special effort should be made to clarify the meaning of individualization and its implications.

7. In those schools where parents feel the program is not being implemented, the situation should be investigated from the school board level to the classroom level.

8. The administration should continue to foster a collaborative and mutually respectful tone in their schools.

9. Future evaluations should continue to include opportunities for parents to give written comments and have oral discussions regarding the DLP. Either procedure by itself gives limited data. Perhaps questionnaires should be mailed to parents who don't attend the meetings.

TABLE 20 Hempstead Parent Interview Questionnaire.

	FULTON		FRANKLIN		JACKSON		LUDLUM		WASHINGTON		MARSHALL		PROSPECT		DISTRICT	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
	13		13		34		6		18		23		19		126	
Quest. 1																
1 yr	7	54	0	00	7	21	2	33	4	22	4	17	4	21	28	22
2 yr	2	15	4	31	8	24	2	33	6	33	7	30	6	32	35	28
3 yr	4	31	8	61	13	38	1	17	8	45	12	52	9	47	55	44
4 yr	0	00	1	8	3	9	1	17	0	00	0	00	0	00	5	4
Quest. 2																
Yes	10	77	8	62	9	27	0	00	10	56	14	61	16	84	67	53
No	2	15	0	00	9	27	4	67	1	5	1	4	0	00	17	13
n't Know	1	8	2	15	5	15	2	33	7	39	6	26	2	11	25	20
Quest. 3																
Yes	8	61	4	31	10	30	3	50	11	62	8	35	16	84	60	48
No	1	8	2	15	9	27	1	17	3	17	5	22	0	00	21	17
D.K.	4	31	3	23	5	5	2	33	1	6	6	26	2	11	23	18
Quest. 4																
Yes	12	92	12	92	1	3	3	50	15	83	20	87	16	84	79	63
No	0	00	0	00	4	12	1	17	1	6	1	4	0	00	7	6
D.K.	1	8	1	8	5	15	2	33	1	6	1	4	1	5	12	10
Quest. 5																
Yes	13	100	12	92	25	74	2	33	17	94	19	83	18	95	106	84
No	0	00	0	00	3	9	1	17	0	00	1	4	0	00	5	4
D.K.	0	00	1	8	2	6	0	50	1	6	1	4	1	5	6	5
Quest. 6																
Yes	5	38½	4	31	2	6	4	67	9	50	7	30	7	37	38	30
No	3	23	4	31	21	62	0	00	0	00	9	39	1	5	38	30
D.K.	5	38½	5	38	8	24	1	17	8	44	6	26	7	37	40	32
Quest. 6a																
Yes	0	00	1	8	0	00	1	17	3	17	0	00	3	16	8	6
No	4	31	1	8	13	38	0	00	0	00	8	35	2	10	28	22
D.K.	3	23	4	31	5	15	1	17	9	50	5	22	4	22	31	25
Quest. 7																
Yes	8	62	8	62	15	44	4	67	14	78	10	44	15	79	74	59
No	1	8	0	00	7	21	0	00	1	6	2	9	2	10½	13	10
D.K.	2	15	4	31	7	21	2	33	3	17	10	44	2	10½	30	24
Quest. 8																
Yes	13	100	12	92	19	56	4	67	17	94	18	78	17	90	100	79
No	0	00	1	8	8	24	1	17	0	00	0	00	0	00	10	8
D.K.	0	00	0	00	3	9	1	17	1	6	5	22	0	00	10	8
Quest.9																
Yes	3	23	4	31	25	74	5	83	5	28	18	78	5	26	65	52
No	7	54	2	15	3	9	0	00	6	33	1	4	5	26	24	19
D.K.	2	15	1	8	0	00	1	17	3	17	1	4	4	21	12	10

Findings from Discussion at Parent Meetings

Franklin

At Franklin, parents expressed a great deal of concern regarding lack of information and confusion about DLP--its operation and administration. During discussion, Franklin parents seemed to feel quite uninformed, pessimistic, and negative about DLP, although this negative and powerless attitude was not equally reflected in responses to the questionnaire items or written comments. At Franklin, oral discussion focused on concern about the locus of political power within the town's administration. In addition, parents were worried about the quality of training provided for teachers. There was also some fear that Franklin would have to conform so strictly to program guidelines that the DLP couldn't be adapted adequately to the school's individual needs.

Fulton

Fulton parents expressed their views of the DLP in a manner that ranged from high praise to moderate criticism. They seemed to be pleased about the following aspects of the DLP:

1. The opportunity for students to progress at their own rate based on interest and achievement.
2. The amount of freedom that students have to explore new areas of interest; the deemphasizing of adult control.
3. Special consideration given to the uniqueness of learning styles peculiar to individual students.
4. The amount of emphasis placed on mathematics and reading.
5. The free and adventurous atmosphere generated in DLP classes which encourages communication and cooperation.
6. The manner in which students are growing in self-direction and independence.
7. The incentive to learn provided by exposure to level tests.
8. The opportunities available to students and parents to learn about various ethnic groups.
9. More productive and meaningful teacher-parent conferences.
10. The emotional supports the program offers to both staff and students.

In general, the parents were enthusiastic, hopeful, and nondefensive. The following questions embody the fears they expressed about the program:

1. Does the program provide enough direction?
2. Why aren't the Hempstead achievement scores more quickly and noticeably raised?
3. Does the program sufficiently emphasize geography, art, history, and science?

Ways were discussed to facilitate communication between working parents and the DLP.

The discussion session was particularly useful at Fulton, since only three written comments were added by parents to the questionnaires.

Jackson

At Jackson there was a lively discussion and many written comments. Parents seemed dissatisfied and many were trying to decide whom to hold accountable. Written comments focused more on staff and classroom operation than political administration but discussion revealed much dissatisfaction with these elements of the program:

1. classroom operation and lack of guideline implementation .
2. administration/political.

Parents here seemed to feel uninformed and powerless although meetings had been held earlier to foster communication. General feelings of distrust were expressed during the discussion period.

Ludlum

Very few parents attended this meeting. Those who came didn't seem to be too well informed about the program and asked questions regarding individualization. A few teachers were present. One parent said that the DLP is a good program while another didn't feel it was any different from previous procedures and furthermore that the program overemphasized levels. The group, perhaps because of its small size, was somewhat hesitant to talk, although there were some written comments asking for more information about the DLP. It is difficult to draw conclusions about Ludlum parents' feelings about the program due to this small turnout. In a desire to obtain a more representative sample of Ludlum parents there was an attempt made to schedule another parent meeting. However, it was felt by the school administration that this was unnecessary, as parents satisfied with the program felt no need to attend the meeting.

Marshall

Most concern at the Marshall School parent meeting was about gaining information rather than responding to the DLP. It was unclear whether this was due to the way the meeting was structured or to the sizable number of parents at Marshall who still felt uninformed. The questions asked were primarily with respect to classroom operation, this was consistent with the focus of written comments.

Prospect

The parents unanimously lauded the DLP, praising those who had contributed most to the academic success of their children.

It was generally agreed that the DLP is a step in the right direction. The participants felt that the program provided a natural setting for students to grow and develop at their own rate as they work in groups varying with respect to attitudes, learning styles, ethnic and socio-economic status, achievement, and social maturity; and that the structure of the DLP encouraged flexibility in arranging instructional experiences to serve as the foundation for innovative and successful growth experiences for both teacher and student. The parents and teachers present agreed that the school administration encourages articulation of the program and facilitates its implementation.

Washington

Most of the discussion at Washington School focused on classroom activities and curriculum. In general, those parents who felt informed were very supportive of the DLP, although there was a lively discussion of both pros and cons. Teachers, administrators and informed parents were able to answer the many questions of those parents who felt uninformed.

Those supporting the program agree that DLP creates conditions which help children to like school, learn well and gain self-confidence, and encourages cooperation and respect between teachers and children.

A particular problem discussed was that, due to the large number of non-English speaking parents in this neighborhood, communication is made more difficult. Both the staff and parents expressed concern over the present report card.

Very few parents added written comments to their questionnaires although oral discussion was lively.

Chapter VI ACHIEVEMENT TEST DATA

CHAPTER VI ACHIEVEMENT TEST DATA

A. INTRODUCTION

In order to answer the evaluation questions concerned with the extent of mathematics and reading achievement during the 1971-1972 school year several different analyses of the Metropolitan Achievement test data were conducted and are presented in this chapter.

Before presenting these analyses the reader is asked to review the following statement of caution contained in the 1970-1971 DLP evaluation and still appropriate:

"... no standardized test, even the Metropolitan '70, which is the most up-to-date test available, can be said to have perfect or even near perfect content validity for use with the Hempstead DLP. If in fact the DLP is both a continuous progress program and a program which has reexamined, and shuffled certain skills with regard to 'grade' placement, then it is extremely unlikely that any instrument not specifically developed for Hempstead could serve to evaluate growth perfectly. It is for this reason that Teaching & Learning offers this evaluation as a supplement to the 'in house' evaluation where growth is examined from the perspective of change in skill level as measured by the DLP performance tests.

"The statement should not be interpreted to mean that the standardized test data are worthless. Nothing could be further from the truth. These tests, with their national norms, together with such information as is supplied by the New York State Pupil Testing Program are essential to a comprehensive evaluation of academic status and growth. Our caution is, therefore, to use all data and not just to select the one which agrees with any preconceived need."

B. DATA ANALYSIS PROCEDURES

Grade Equivalents

All analyses were based upon achievement data supplied to Teaching & Learning by the office of Student Personnel of the Hempstead Public Schools.

In attempt to answer the first two evaluation questions concerning achievement in reading and math, the Metropolitan Achievement Test Scores for 1971-1972 for all DLP Students for whom both sets of scores were available (N=1300) were analyzed using correlated 't' tests.

While the evaluation team recognized that the DLP is a continuous progress/non-graded program, nevertheless the Metropolitan Achievement Test results are traditionally reported in Grade Equivalent Scores. We have continued this practice with some reluctance. However, we do believe that these scores do communicate achievement to both parents and teachers and do not imply that Hempstead is actually operating in a graded system.

It should be noted that a grade equivalent is a relative score derived from the raw score in relation to how well the entire group used to standardize the test scored. That is, for a "traditional" third grade group a grade equivalent of 3.0 is that score assigned to the median raw score. One half of the standardization samples did better than 3.0 and one half did less well. Implicit in the grade equivalent system is the notion that for each month of school the student (s) at the median will "grow" .1 GE. In practice those students beginning a year above the median often "grow" somewhat more than .1 GE per month and similarly those below the median can often be expected to make less than .1 GE progress per month.

All average grade equivalent reported below must be interpreted in this context.

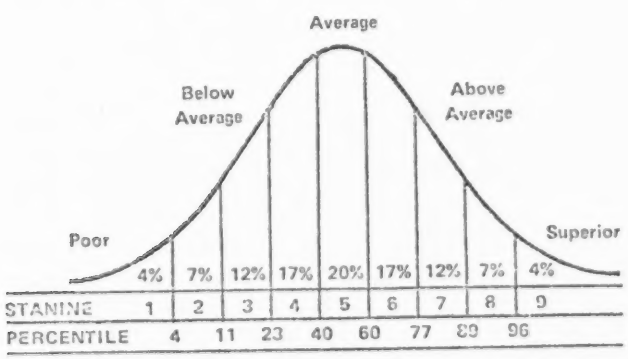
The results of the correlated 't' test analyses are presented in Tables 21-30 beginning on page 57.

Stanines

In addition to these Grade Equivalent analyses, we have also reported achievement in terms of stanines. This standard score system is reported by the test publisher and allows the reader to compare the distribution of DLP students with those in the national standardization group.

The following description is quoted from the Metropolitan Test Manual:

> "Stanine. A stanine is a value in a simple nine-point scale ranging from a low of 1 to a high of 9, with 5 always representing average or typical performance for the norm group. Stanines are equally spaced steps along a scale; they do not 'bunch up' or spread out at different points along the scale as percentile ranks do. Since stanines are single-digit numbers, they are easier to work with than are other types of scores, just in terms of the amount of data to be reviewed. Also, use of stanines helps to avoid some of the overly precise connotations of two- or three-digit scores."



The normal curve illustrates the percentage of the standardization group falling in each of the nine stanines. Comparison with the DLP students will follow.

C. RESULTS

1. Grade Equivalents

Means, standard deviations, and 't' ratios are presented below for both mathematics and reading achievement scores for all students for whom both 1971-1972 scores are available.

Table 21

Correlated 't' test, means + standard deviations for Metropolitan Achievement Test - Reading for the 7 year old group.

TEST	N	MEAN G.E.	S.D	t
1971	296	2.00	.65	
1972	296	2.93	.94	13.14*

*p<.01

Table 22

Correlated 't' test, means + standard deviations for Metropolitan Achievement Test - Math for the 7 year old group.

TEST	N	MEAN	S.D	t
1971	296	2.05	.99	
1972	296	3.16	.98	12.86*

*p<.01

Table 23

Correlated 't' test, means + standard deviations for Metropolitan Achievement Test - Reading for the 8 year old group.

TEST	N	MEAN	S.D	t
1971	277	2.87	.99	
1972	277	3.57	1.53	6.20*

*p<.01

Table 24

Correlated 't' test, means + standard deviations for Metropolitan Achievement Test - Math for the 8 year old group.

TEST	N	MEAN	S.D	t
1971	277	2.96	1.00	
1972	277	4.02	1.36	10.13*

*p<

Table 25

Correlated 't' test, means + standard deviations for Metropolitan Achievement Test - Reading for the 9 year old group.

TEST	N	MEAN	S.D	t
1971	265	3.31	1.38	
1972	265	4.00	1.63	5.26*

*p<.01

Table 26

Correlated 't' test, means + standard deviations for Metropolitan Achievement Test - Math for the 9 year old group.

TEST	N	MEAN	S.D	t
1971	265	3.52	1.36	
1972	265	4.57	1.63	8.06*

*p<.01

Table 27

Correlated 't' test, means + standard deviations for Metropolitan Achievement Test - Reading for the 10 year old group.

TEST	N	MEAN	S.D	t
1971	138	4.31	1.79	
1972	138	5.50	1.88	5.39*

*p<.01

Table 28

Correlated 't' test, means + standard deviations for Metropolitan Achievement Test - Math for the 10 year old group.

TEST	N	MEAN	S.D	t
1971	138	4.83	1.63	
1972	138	6.01	1.44	6.37*

*p<.01

Table 29

Correlated 't' test, means + standard deviations for Metropolitan Achievement Test - Reading for the 11 year old group.

TEST	N	MEAN	S.D	t
1971	324	4.74	1.47	
1972	324	5.82	1.91	8.07*

*p<.01

Table 30

Correlated 't' test, means + standard deviations for Metropolitan Achievement Test - Math for the 11 year old group.

TEST	N	MEAN	S.D	t
1971	324	5.07	1.31	
1972	324	6.34	2.02	9.99*

*p<.01

2. STANINES

The mean scores for each group reported on in the preceeding section (Grade Equivalent Analyses) has been converted through the use of the Metropolitan's Teacher's Manual and are reported below in Stanine scores.

Table 31

Stanines corresponding to the mean achievement scores for Reading and Mathematics for each age group.

1972 Age Groups	STANINES			
	Reading		Mathematics	
	1971	1972	1971	1972
6	-	6a	-	7b
7	6a	6a	6a	6a
8	6a	5a	6a	6a
9	5a	4a	4a	5a
10	5a	5a	5a	6a
11	4a	4a	4a	5a

a - middle 54% = average
b - 12% above average 54% = above average

D. CONCLUSIONS

1. Grade Equivalent Analysis

The fact that the 1971-1972 differences are significant in each and every case is neither surprising nor for that matter truly relevant. A more important question to be answered is: Did the Hempstead DLP students progress as much as we could expect based on the 1971 scores?

Table 32 below is presented to shed some light on this question.

Table 32

1971-1972 Means, 1971-1972 difference for both Reading & Math Achievement for each age group.

1972 Age Group	Reading Mean GE			Math Mean GE		
	1971	1972	1971-1972 Diff.	1971	1972	1971-1972 Diff.
7	2.00	2.93	.93	2.05	3.16	1.11
8	2.87	3.57	.70	2.96	4.02	1.06
9	3.31	4.00	.69	3.53	4.57	1.05
10	4.31	5.50	1.19	4.83	6.01	1.18
11	4.74	5.82	1.08	5.07	6.34	1.27

It is impossible to know why or how these results emerged, rather one can suggest possible explanations.

The plausibility of the explanation must be judged by the reader. Clearly more than one explanation is possible.

At the end of May of 1971 the median standardization group Grade Equivalent for both tests would have been as follows:

Age Group 7----------1.9
8----------2.9
9----------3.9
10----------4.9
11----------5.9

The 1971-1972 difference for those beginning at the above grade equivalent is expected to be 1.0.

The 1971 six year old group finished that year slightly above average (2.00-1.90) and finished this year also slightly above average (2.93-2.90) the 1971-1972 average growth was .93 GE.

An examination of Table 31 reveals that these students' progress and status in math is somewhat higher than the national average. It would appear then, that this group completing their second DLP year (except for transfer students) has just about mirrored the national average. Although only time will tell, they appear to be progressing in reading at a rate equal to what we could expect.

The 1971 seven year old group was just about at the average in reading in May 1971 (2.87-2.90) however this year they were somewhat below the national average in reading (3.52-3.90) their 1971-1972 average growth was .70. In math on the other hand they began (2.96-2.90) and finished (4.02-3.90) somewhat above the national average their 1971-1972 average growth in was 1.11.

On the basis of this data alone it is impossible to explain the somewhat lower than average gain made by this group in reading. Certainly it would be incumbent on the district to reexamine their reading program to see if any plausible answer could be found. Progress in math for this same group was above the national average.

The 1971 8 year old group was considerably below the national average in May (3.31-3.90). This below average status continued and in May of 1972 their average reading score was 4.00 rather than the national average of 4.90 and the 1971-1972 difference in reading was .69. In math once again, the picture is somewhat different. While these students' ended their third and fourth year at school, somewhat below the national average (3.52-3.90, 4.57-4.90).[1] Their 1971-1972 growth slightly exceeded the national average (1.05-1.00).

Once again it is impossible to explain this discrepancy. Why is it that these two groups, this year's 8 and 9 year olds, made somewhat less progress than would have been expected by their 1971 score? Once again a more careful look at the reading program and its implementation is suggested.

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[1] The first G.E. in each pair refers to the actual score or difference taken from Table 32. The second G.E. refers to the comparable figure from the standardization group. Please note that 1972 eight year olds, for example, are also referred to as 1971 seven year olds.

While the next two groups, this year's 10 and 11 year olds, did begin the year below the national average in reading (4.3-4.9: 4.74-5.9) and did end below the national average (5.50-5.9; 5.82-6.9), their 1971-1972 growth in reading achievement was somewhat higher than the national average (1.19 and 1.08).

It would be correct to conclude that these groups have made reading progress in excess of what would have been expected by their 1971 scores.

In math the progress is even more striking. The 10 year old group's 1971 score was 4.83 compared to the national average of 4.90 and its 1972 score was 6.01 compared to 5.90. That is, not only was the progress greater than the national average (1.18-1.00) but the concluding GE was also higher (6.01-5.90).

The 11 year old group's 1971 Math score was considerably below average (5.07-5.90) and its 1972 score is still somewhat low (6.34-6.90). However, the 1971-1972 growth (1.27-1.00) is greatly in excess of the national average and considerally higher than could be expected by a group with its past history.

It would appear, then that the DLP is having a positive affect on these two groups. Once again only a continued evaluation will determine if progress will last.

1972 - 6 Year Old Group - Reading and Math Score

1972's 6 year old group was not tested during the 1971 year. However their 1972 Reading and Mathematics results are recorded below as an indication of the of the foundation in formal learning that these students received during their first DLP year.

Table 33

Means Deviations for Reading and Mathematic Achievement Scores 1972's 6 year old group (N=397)

	Mean	S.D
Reading	2.0	<1.0
Math	2.4	1.0

Once again it appears that the DLP has had a positive influence on the students in their first formal year of schooling. (See Table 21.) The 1972 6 year old group achieved higher than the national standardization group in reading (2.0-1.9) and even more so in Math (2.4-1.9).

From what we know about the importance of a successful foundation in these areas one could predict that the Hempstead DLP student is off to a good start in his many years of schooling. Once again, however, only future evaluation will determine if this positive beginning will contribute to better performance through the years.

2. STANINES

An examination of Table 31 reveals that the District's Mean achievement scores generally fall in the average stanines. (The six year old groups' Math is above average.)

In addition it can be noted that the eight and nine year old group's average stanine declined slightly in reading, while the 9, 10, and 11 year old groups average stanine increased slightly in Mathematics.

Further, the incidence of stanine 6 appears greater for the younger than for the older groups.

One additional method of comparing Hempstead achievement with that of the national standarization group is presented in Table 34 below. In it the stanine distributions of 1971 and 1972 Reading and Mathematics scores are listed in each of the 9 stanine categories. It should be recalled that stanine 1 is classified as Poor; stanine 2 and 3 as Below Average; stanine 4, 5 and 6 as Average; stanine 7 and 8 as Above Average; and stanine 9 as Superior by the Metropolitan Achievement Test publishers.

Table 34

National and Hempstead stanine distribution and chi-square values of 1971 and 1972 Metropolitan Reading Scores - all age groups combined.

IN PERCENTS

	Stanine	Poor 1	Below Average 2	3	Average 4	5	6	Above Average 7	8	Superior 9	x^2
1971-	National	4	7	12	17	20	17	12	7	4	15.5*
	Hempstead	5.5	13.3	19.1	20.2	18.0	11.3	6.4	3.0	3.1	
1972-	National	4	7	12	17	20	17	12	7	4	4.3
	Hempstead	4.2	10.5	15.7	17.9	17.6	15.8	9.9	3.9	4.4	

*$P < .05$

Table 35

National and Hempstead stanine distribution and chi-square values of 1971 and 1972 Metropolitan Mathematics Scores - all age groups combined.

IN PERCENTS

	Stanine	Poor 1	Below Average 2	3	Average 4	5	6	Above Average 7	8	Superior 9	x^2
1971-	National	4	7	12	17	20	17	12	7	4	23.0*
	Hempstead	9.5	16.3	16.6	16.9	14.7	10.4	7.6	4.4	3.6	
1972	National	4	7	12	17	20	17	12	7	4	5.1
	Hempstead	1.4	6.4	10.6	18.7	18.8	16.2	12.6	7.8	7.5	

*$P < .05$

An examination of the Reading Test data reveals two major findings: First, the 1972 distribution is closer to the national distribution than was the case in 1971.

(1971 x^2 was significant while 1972 was not.) And second, the change appears to be toward the "Above Average" end of the distribution. (1971 Above Average and Superior = 12.5%; 1972 = 18.2%; National = 23%.)

An examination of the Mathematics Test data reveals the same two major findings. First, the 1972 distribution is closer to the national distribution than was the case in 1971. (1971 x^2 was significant while the 1972 was not.)

And second, the change appears to be toward the "Above Average" end of the distribution. (1971 Above Average and Superior = 15.6%; 1972 = 27.9%; National = 23%.)

In fact it should be noted that in 1972 Hempstead's score distribution exceeds that of the national standardization group on the positive side of the Average Group.

The second aspect of the achievement data analysis was planned to answer 4 basic questions. Stated simply they are:

1-Does knowing a student's self-concept help us to better predict his reading & math achievement scores above and beyond previous achievement, years in the program, and teacher rating? Or to what extent is self-concept related to achievement?

2-Does knowing a student's teacher's "I" score (degree of individualization), help us to better predict his 1972 reading & math achievement score above and beyond previous achievement, self-concept and years in the program? Or to what extent is individualization of instruction related to achievement?

3-Does knowing how long a student has been in the DLP help us to better predict his 1972 reading & math achievement scores above and beyond previous achievement, self-concept and teacher rating? Or to what extent is years in the DLP related to achievement?

4-Finally, does knowing a student's 1971 reading & math scores help us to better predict his 1972 scores above and beyond previous achievement, self-concept, teacher ratings and years in the program? Or to what extent is last year's achievement related to this year's achievement?

The statistical procedure used to answer these questions is Multiple Linear Regression. The following is offered as an explanation for how these statistics are to be used:

Multiple linear regression analysis can be explained in a straightforward manner. First, a criterion measure is identified (Y) which might, for example, represent 1972 scores on the Metropolitan Reading Test. Our concern, then, is to try to explain variation in scores which students obtain in reading on the basis of other presumably relevant information concerning the student. Variables which are in actuality relevant to Y should explain some of the variation in Y; if a variable is irrelevant to Y it should explain none of the variance in Y. That is, if self-concept is relevant to reading, variations in self-concept will be associated with variations in reading.

These presumably relevant variables (labeled $X_1 \ldots X_K$) can be thought of as predictors of Y and each person's score on Y can be considered a linear combination of these relevant variables, appropriately weighted, and an error term or a residual reflecting the extent to which X does not explain Y. In perfect explanation, there will be no error or "residual." This is rarely achieved in educational studies. Magnitude of this error can be considered an index of the extent to which we have failed to account for variation in Y; larger error representing poorer explanation. Conversely, the percent of variation in Y that is explained is an index of successful explanation.

Returning to a consideration of Metropolitan Reading Scores, if we were asked to guess an individual student's score on that variable $(\hat{Y})$, our best guess, or the one which would result in the least total errors would be the mean, $\bar{Y}$, for each student. But suppose we possess other information concerning the student, for example, sex. Would we alter our guess? Would we still guess the mean ($\bar{Y}$) regardless of whether the subject is male or female? The answer is that if we believed sex relevant, our best strategy would be to guess the mean for males $(\bar{Y}_M)$ if the student is a male and the mean for females $(\bar{Y}_F)$ if the subject is a female. However, if this procedure of predicting differently for males and females failed to result in less error than simply predicting the overall mean (Y) for both sexes, we would conclude that information about sex is irrelevant to Metropolitan Reading Scores. In essence, this is the basic way of proceeding in a step by step regression analysis.

A more formal treatment would be as follows:

Research Question: Do the sexes differ on Metropolitan Reading?

Full Model: $\hat{Y} = a_0 u + a_1 x_1$

where:

$\hat{Y}$ = predicted score on Metropolitan Reading Test

a_0 = regression constant (a common weight)

u = a unit vector

a_1 = a least square regression weight for sex

x_1 = sex; 1 if male, 0 if female

Since a detailed exposition of the development of the statistics is beyond the scope of the present report, suffice it to say that a full model's success in predicting the criterion (Y) can be quantified as R^2, the percent of variation in Y explained by the model.

Since a detailed exposition of the development of the statistics is beyond the scope of the present report suffice it to say that a full model's success in predicting the criterion (Y) can be quantified as R^2, the percent of variation in Y explained by the model.

The R^2 obtained from the use of the full model which includes information about the sex of the subject can be compared with the R^2 obtained from what is termed a restricted model where sex is purposefully ignored. The restricted model would be as follows:

Restricted Model:

$$\hat{Y} = a_0 u$$

where: Y= predicted score on Metropolitan Word Knowledge

a_0 = a common weight (the grand mean)

u = a unit vector (every subject scored 1)

(This is referred to as model 90 in the FORTRAN IV format). An F-Ratio involving R^2 full and R^2 restricted can then be computed along with an alpha level. The formula for the F-Ratio is:

$$F = \frac{(R^2 \text{ full} - R^2 \text{ restricted}) \ / \ M_1 - M_2}{1 - R^2 \text{full}) \ / \ N - M_1}$$

Where:

R^2 full = percent of total variance accounted for with knowledge of sex

R^2 restricted = percent of total variance accounted for without knowledge

M_1 = the number of linearly independent vectors used to calculate R^2

M_2 = the number of linearly independent vectors used to calculate R^2

N = number of subjects

$1 - R^2$ full = percent of unaccounted for variances

This general approach can be expanded to include several X variables, a rule of thumb being that there ought to be about ten times as many subjects as predictor variables. Kelly, et al., have demonstrated that the the multiple linear regression analysis is a general form of analysis of which analysis of variance, tests, and covariance analysis are special cases.

Basic Question 1

1 - Does knowing a student's self-concept help us to better predict his 1972 reading & math achievement scores above and beyond previous achievement, years in the program and teacher rating? Or to what extent is self-concept related to achievement?*

(A) FULL MODEL:

$$\text{1972 Reading Achievement } (\hat{Y}) = aou + (a_1 x_1)(\text{self-concept}) + (a_2 x_2)(\text{teacher's I score}) + (a_3 x_3)(\text{\# years in DLP}) + (a_4 x_4)(\text{1971 reading score})$$

$$R^2 = .656$$

RESTRICTED MODEL:

$$\text{1972 Reading Achievement } (\hat{Y}) - aou + (a_2 x_2)\ \text{teacher's I score} + (a_3 x_3)(\text{\#years in DLP}) + (a_4 x_4)(\text{1971 reading score})$$

$$R^2 = .0007;\ F=0.13\ \text{n.s}$$

ANSWER QUESTION 1A

No. Knowledge of self-concept does not appear to help explain variance in 1972 reading scores. This may in part be due to the fact the 1971 reading scores explain almost all of the variance accounted for. In addition the correlation between pre and post self-concept tests and 1972 reading was .05 and .003, hardly any correlation at all.

(B) FULL MODEL:

$$\text{1972 Math Achievement } (\hat{Y}) + aou + (a_1 x_1)(\text{self-concept}) + (a_2 x_2)(\text{teachers I score}) + (a_3 x_3)(\text{\# years in DLP}) + (a_4 x_4)(\text{1971 math score})$$

$$R^2 = .65$$

*Self-concept data were collected on a 25% sample; all other data were collected on N=1300 (all those with both 1971 and 1972 scores).

ANSWER QUESTION 1B:

No. knowledge of self-concept does not appear to help explain variance in 1972 math scores. This may again be due in part to the fact that 1971 math scores explain almost all of the variance accounted for. In addition the correlation between pre and post score test and math was only .008 and 0.062.

Basic Question 2:

2 - Does knowing a student's teacher's "I" score (degree of individualization) help us to better predict his 1972 reading and math achievement score? Or to what extent is individualization of instruction related to achievement?

(A) FULL MODEL:

$$\text{1972 Reading Achievement } (\hat{Y}) = aou + a_1 x_1 + a_2 x_2 + a_3 x_3 + a_4 x_4$$

$$R^2 = .66$$

RESTRICTED MODEL:

$$\text{1972 Reading Achievement } (\hat{Y}) = aou + a_1 x_1 + a_3 x_3) + a_4 x_4$$

$$R^2 = .66; F = 0.73 \text{ n.s.}$$

ANSWER QUESTION 2A:

No. knowledge of the student's teacher's "I" score does not appear to help explain variance in 1972 reading scores. This may be in part due to the fact that 1971 reading scores explain almost all of the variance accounted for. In addition correlation between pre and post teacher rating and 1972 reading was only.025 and .048.

(B) FULL MODEL:

$$\text{1972 Math Achievement } (\hat{Y}) - aou + a_1 x_1 + a_2 x_2 + a_3 x_3 + a_4 x_4$$

$$R^2 = .65$$

RESTRICTED MODEL:

$$\text{1972 Math Achievement } (\hat{Y}) = aou + a_1 x_1 + a_3 x_3 + a_4 x_4$$

$$R^2 = . \quad ; F=$$

ANSWER QUESTION 2B:

No. knowledge of the student's teacher's "I" score does not appear to help explain variance in 1972 math scores. This may be in part due to the fact that 1971 math scores explain almost all of the variance accounted for. In addition the correlation between pre and post teacher ratings and 1972 math was only .017 and .088.

Basic Question 3

Does knowing how long a student has been in the DLP help us to better predict his 1972 reading and math achievement scores? Or to what extent is years in the DLP related to achievement?

(A) FULL MODEL:

$$\text{1972 Reading Achievement } (\hat{Y}) = aou + a_1 x_1 + a_2 x_2 + a_3 x_3 + a_4 x_4$$

$R^2 = .66$

RESTRICTED MODEL:

$$\text{1972 Reading Achievement } (\hat{Y}) = aou + a_1 x_1 + a_2 x_2 + a_4 x_4$$

$R^2 = .66$; $F = .013$ n.s.

ANSWER QUESTION 3A:

No. knowledge of the number of years a student has been in the DLP does not appear to help explain variance in 1972 reading score. This may in part be due to the fact that 1971 reading scores explain almost all of the variance accounted. In addition the average correlation between the number of years in the DLP and 1972 reading was only .015.

(B) FULL MODEL:

$$\text{1972 Math Achievement}(\hat{Y}) = aou + a_1 x_1 + a_2 x_2 + a_3 x_3 + a_4 x_4$$

$R^2 = .65$

RESTRICTED MODEL:

$$\text{1972 Math Achievement } (\hat{Y}) = aou + a_1 x_1 + a_2 x_2 + a_4 x_4$$

$R^2 = .64$; $F + 2.44$ $p \angle .05$

ANSWER QUESTION 3B:

Yes. Knowledge of the number of years a student has been in the DLP does appear to explain a significant amount of the variance in 1972 math scores. It should be noted, however, that while the F is significant, only 1% of the variance accounted for has been explained by this variable. The average correlation between years in the program and 1972 math was only .025.

Basic Question 4:

4 - Finally, does knowing a student's 1971 reading and math scores help us to better predict his 1972 scores, or to what extent is last year's achievement related to this year's achievement?

(A) FULL MODEL:

$$\text{1972 Reading Achievement } (\hat{Y}) = aou + a_{11}x + a_{22}x + a_{33}x + a_{44}x$$

$R^2 = .66$

RESTRICTED MODEL:

$$\text{1972 Reading Achievement } (\hat{Y}) = aou + a_{11}x + a_{22}x + a_{33}x$$

$R^2 = .0007$

ANSWER QUESTION 4A:

Yes. Knowledge of 1971 reading scores appear to explain almost all of the variance in 1972 reading scores. Correlation = .81

(B) FULL MODEL:

$$\text{1972 Math Achievement } (\hat{Y}) = aou + a_{11}x + a_{22}x + a_{33}x + a_{44}x$$

$R^2 = .65$

RESTRICTED MODEL:

$$\text{1972 Math Achievement } (\hat{Y}) = aou + a_{11}x + a_{22}x + a_{33}x$$

$R^2 + .01$

ANSWER QUESTION 4B:

Yes. Knowledge of 1971 math scores appears to explain almost all of the variance in 1972 math scores. Correlation = .80

In conclusion, it appears that on the basis of these analyses one can report that only 1971 achievement scores appear to be related to 1972 scores. That is, there is great year to year consistency in achievement, and in addition the other variables while important on their own, do not appear at this time related to achievement.

In addition to the Multiple Linear Regression question presented above, 1972 reading and math scores were reanalyzed for each age group by the number of years in the DLP. This material is presented in Tables 36 and 37 below.

Table 36

Grade Equivalent Means and Standard Deviation in 1972 Reading for students participating in programs for various time periods.

Time in Program	Age Group 7 $\bar{X}$	7 S.D.	8 $\bar{X}$	8 S.D.	9 $\bar{X}$	9 S.D.	10 $\bar{X}$	10 S.D.	11 $\bar{X}$	11 S.D.
1 year	*		3.15	.88	*		*		*	
2 years	2.92	.97	3.05	.87	4.14	1.75	5.20	1.79	5.88	1.91
3 years	2.96	.81	3.81	1.72	4.07	1.58	5.50	1.89	5.58	2.01

Table 37

Grade Equivalent Mean and Stadard Deviation in 1972 math for students participating in program for various time periods.

Time in Program	Age Group 7 $\bar{X}$	7 S.D.	8 $\bar{X}$	8 S.D.	9 $\bar{X}$	9 S.D.	10 $\bar{X}$	10 S.D.	11 $\bar{X}$	11 S.D.
1 year	*		3.94	1.01	*		*		*	
2 years	3.23	.99	3.82	1.01	4.81	1.71	5.72	1.08	6.44	1.88
3 years	2.92	.74	4.17	1.45	4.65	1.50	6.03	1.45	6.16	2.43

* Not sufficient numbers to calculate meaningful statistic

Table 38

Table of N's used in Analysis for Tables 36 and 37

	1 year	2 years	3 years
Grade 2	2	245	40
3	18	70	184
4	2	32	209
5	1	18	111
6	2	285	29

N = 52 Years in program indeterminate

No statistical analysis is necessary to demonstrate that the results are inconsistant. That is, reading and math achievement does not necessarily improve with the number of years in the DLP.

It must be understood, however, that this analysis is not saying that the achievement of any particular child did not improve because he stayed in the DLP for 3 years instead of two. What the analysis is examining is the differences between different children on the basis of how long they have been in the district.

E. SUMMARY

The analyses just reviewed reveal that:

1 - The six year old DLP student group is off to an excellent beginning in both Reading and Math with scores exceeding the national average.
2 - The seven year old group maintained their above average status of a year ago in both Reading and Math.
3 - The eight and nine year old groups have made generally less progress in Reading this year than was expected based on their 1971 scores.
4 - The eight year old group began above average, ended above average and made above average progress in Math in 1972.
5 - The nine year old group began the year and ended the year below average, however made above average progress in Math during 1972.
6 - The ten year old group began the year and ended the year somewhat below average in Reading, however their progress was considerably above the national average for the year.
7 - In Math, the ten year old group began the year just below average, however their end of the year score and their year's progress was greater than the national average.
8 - The eleven year old group began the year considerably below average in Reading. While they ended the year below average, their 1972 progress exceeded the progress expected of an "on average" group.
9 - The eleven year old group began and ended 1972 below the national average in Math. However their 1972 progress greatly exceeded what could be expected by their 1971 scores as well as that growth expected for "on average" groups.
10 - The stanine data appear to reveal positive change in both reading and mathematics between the 1971 and 1972 scores. While the Hempstead reading distribution is somewhat poorer than that of the national, the reverse is true in mathematics.

Based on the 1971-1972 change,* it would seem reasonable to expect an even more positive picture in 1973.

*Stanine distribution for each age group is presented in Appendix I.

Chapter VII CONCLUSIONS AND RECOMMENDATIONS

CHAPTER VII CONCLUSIONS AND RECOMMENDATIONS

For the purposes of evaluating gains made by students in the Hempstead Directed Learning Program over the 1971-1972 school year, the following indices were used:

Pre and Post Student Attitude Questionnaire Responses

Degree of Individualization in the classroom as measured by pre and post administration of the "I" scale

Comparison of 1970-71 and 1971-72 reading and mathematics achievement test scores.

The student attitude questionnaires revealed that Hempstead DLP students generally feel positive about coming to school and their ability to do better than average school work. Approximately 3/4 of the sampled students felt family support for their work in school, while about half felt school personnel support. Most students (about 80%) felt that school personnel and peers were glad to see them in school each day.

Black students' questionnaire responses indicate that their self-concepts and attitudes toward school are generally more positive than would have been predicted from their sample representation. Response inconsistencies, however, make it difficult to generalize student perceptions regarding materials and classroom discussions of contributions of Blacks, Spanish speaking and Oriental Americans.

In order to assess degree of individualization in the classroom, the "I" scale was administered on a pre and post test basis. A high increase in level of individualization was found within classrooms, for all families and all schools. However, as the "I" scale does not directly measure quality of instruction, intensive content analysis of this factor and analysis of pupil performance are needed to supplement the very positive findings of the "I" scale administration.

In order to assess the quality of the DLP reading and mathematics programs (evaluation objectives C and D), curricular experts in continued education reported the following summarized findings:

It was generally agreed that the reading program needs more supplementation than the mathematics program, and that more emphasis should be given to a decoding and/or linguistic basis.

Although format was considered to be less important than actual sufficiency of materials in the classroom, materials were found to be generally easy to work with when hole-punched and inserted in notebooks. Teachers are provided with a variety of educational materials facilitating individual instruction, with pupil self-pacing and self-evaluation. However, as the materials were generally found to be wanting in suitability for a multi-ethnic, urban population, the choice and development of more pertinent materials for the target population would be indicated. While the materials are seen as beginning steps in the development of a continuous progress curriculum, the teacher is

urged to use them as valuable instructional tools rather than depending entirely on the written program.

Total teacher involvement is viewed as necessary to the success of the program, from program construction through implementation and evaluation. Teacher workshops and in-service training were seen as highly effective methods of developing teacher involvement. Teacher time could be more effectively utilized through the use of group tests. This would allow the child to work with greater independence, and the teacher, less involved in the minutiae of program administration, will be freer to use classroom time as a counselor and guide in the learning experience. There should be continual dialogue between teacher and student regarding individual learning goals and the best means to achieve them.

Evaluation of objective E, to assess the attitudes of the community toward the DLP, was effected through parent discussion meetings in the participating DLP schools and parent questionnaires. While parents indicated that they are generally in favor of the DLP and its objectives, there were noticeable variations in parent acceptance of the program between schools. There was some confusion regarding the meaning of "Individualization," which pinpointed a need for greater communication with the community. This would be of tremendous aid to the parents who feel uninformed about the program.

Some parents are in favor of the program but feel it is not being properly implemented. Others would like to have the curriculum broadened to include more science, art, social studies, and Spanish language instruction. Feelings about diversification and insufficiency of materials and directiveness vs. non-directiveness in the classroom were expressed. When sufficiently informed about the program, parents tended to be positive and supportive of principals, teachers and other school personnel.

In order to assess whether students in the DLP made significant gains in reading and mathematics during the 1971-72 school year, (evaluation objectives A and B), a comparison was made between May, 1971 and May, 1972 achievement test grade equivalent scores. Comparison of 1970-1971 and 1971-1972 achievement tests in reading and math yielded complex results. For all groups,math achievement exceeded 1.0 GE. This is particularly noteworthy in that several began the year below the national average and therefore these results are somewhat above what would normally be expected.

In reading a different picture existed. While the average for the fifth and sixth year groups were somewhat below the nation in the beginning of the year, 1971-1972 progress exceeded the national average. The second year group began and ended the year just about at the national average. On the other hand the third year group,while beginning the year only slightly below the national average, made only .7 GE progress per month this year ending the year lower than the national average. The fourth year group began and finished the year below the national average, making .7 GE progress per month during the year. Their progress, however, was more in keeping with their 1971 scores than was the case with the third year group.

RECOMMENDATIONS: Part I

This final section of the report is divided into two parts. The first contains those recommendations gleaned from the individual components of the 1971-1972 evaluation study. The second part contains recommendations for next year's evaluation of the Directed Learning Program.

The Teaching & Learning Research Corp. Evaluation team recommends that:

The Directed Learning Program be continued with the support of Title I funds.

The essential philosophical and organizational aspects of the program be continually examined and modified, through a process of cooperation between the community and the schools.

Continued efforts be made in the instruction of individualization techniques for all members of the DLP staff.

The "I" scale be readministered periodically in random order after a sufficient time lapse, and the results be compared with original observations thereby decreasing the possibility that non-relevant variables are responsible for perceived change.

An intensive content analysis of the quality of instruction be made to provide the support necessary to enhance instruction.

Both reading and math materials be interfaced with curriculum materials available in the district, with set up of a revision cycle for "debugging" any faulty materials.

DLP materials be made more relevant to the needs of a multi-ethnic, urban student population.

Materials be hole-punched, arranged by levels and placed in binders.

A flexible, reasonable time be set to achieve skills to provide the teacher some guideline for skill completion.

A central resource file be developed by teachers, containing duplicates of workbook pages for teaching specific skills. This resource file should also contain a listing of concrete activities: i.e.,games and audio-visual materials.

Teacher workshops be more thoroughly developed with teachers cooperating in the selection and writing of learning materials. The workshops should provide training in the use of evaluation instruments.

Instructional objectives and learning tasks be designed for each child based on his degree of competence in the materials on entering the program.

Behavioral objectives be stated in easily observable terms, using action verbs, i.e., to write, to stimulate, etc.

Minimum acceptance standards be established for each objective.

A student self-assessment test be developed, permitting the student to check on and evaluate his own progress.

Measurement tools and evaluation procedures be used continuously to improve the components of the instructional system.

Reading

It is recommended that:

The format be made more attractive to students, with an artist or team of artists re-working the layout. Overall printed page should be less crowded.

Background information about the nature of the reading process be made available to teachers.

A more systematic approach to reading be provided, including instruction for evaluation of results.

A class group diagnostic test be provided to determine starting level.

An individual pupil-kept record sheet be kept in addition to teacher records to help the child ascertain where he is at any given point, and to help build pupil responsibility and independence. Graphic representation of pupil progress should be a part of the program.

Comprehension skills be further developed, with a stress for meaning; as the program is developed, interesting experiences should be built in.

Revisions and additions should be made to reading levels 2 and 3. (See Curriculum Evaluation section, Chapter IV.)

A hierarchy of skills from simple to complex, and common to less familiar,be listed in the skills of contractions, abbreviations, prefixes and suffixes.

Instruments be further refined by providing additional criteria and by indicating a minimal level of acceptance standards.

Newly published reading series be studied for possible selection for the DLP.

An adequate supply of library books and paperback books be ordered for each classroom.

Additional games and visual materials be used in the reading program.

Reading activities packages be developed for the intermediate students.

Mathematics

It is recommended that:

Additional instruments be devised for pre-testing.

Complete mathematics program activities packages be developed and provided for each topic on each level, including intermediate students.

Review be done after thorough concept mastery for each operation. Rather than "daily drill" with the whole class, commercial or teacher made games can be used in a math game period at the end of the class.

The district provide extra compensation or released time for a Saturday teachers' workshop so that levels 1 through 14 can be referred to basic textbooks.

Games be ordered for mastery of facts for each classroom or a math resource center be set up in each school. Each mathematics teaching area should have teacher manuals for two mathematics series references on needed levels, and adequate pupil texts.

A pre-test be prepared for each level, containing different items from those contained in the post test.

Rote learning procedures be avoided by providing and fostering application to actual events.

Objectives be spaced-out over a longer time span to reflect more realistically what children can actually learn.

Competency evaluations have more than one example for each objective.

An evaluation form be provided for both teachers and students to comment on the curriculum guide.

Community

It is recommended that:

Schools continue to involve parents and communicate with them regarding the DLP, and parent meetings in homes, as an alternative to school meetings, be considered.

Evening videotape showings of classroom activities be held for parents unable to visit classrooms during the day, and that a variety of audio-visual, manipulative and inter-ethnic materials be delivered to the schools.

A special effort be made to clarify the meaning of the concept of individualization, and its implications for parents.

The comprehensiveness of training procedures for teachers and aides be explored, with joint training procedures for teachers and aides, when possible.

Reasons for negative feelings on the part of some parents be explored, and, in cases where parents feel the program is not being sufficiently implemented, the situation should be investigated from the school board to classroom level.

PART II

Recommendations for Evaluation of the Hempstead Directed Learning Program for the 1972-73 School Year

It is recommended that:

There be a continuation of the evaluation of achievement gains in reading and mathematics.

An in-depth evaluation be made of the communications and interaction between the schools and the Hempstead community.

An analysis of the quality of classroom teaching be conducted, including an examination of materials, specific instructional techniques and staff-pupil relationships.

An in-depth content analysis be undertaken to explore the definition of roles among principals, teachers, learning directors, resource teachers, teacher aides, and other school personnel, including psychologists, counselors, nurses, etc.

APPENDIX A

Major Recommendations from Teaching & Learning Corp. Final Report, 1970 - 71 Which Were Accepted and Implemented by the Hempstead School District During the 1971 - 1972 School Year

General Recommendations

The most important recommendation that can be made as a result of Teaching & Learning's evaluation is to continue the Directed Learning Program, extending it to the sixth grade as planned.

The behavioral objectives should be arranged in terms of charts or graphs with children keeping records of their own progress. More effort should be made to utilize self-correcting materials, or to provide the children with keys so they may check their own work.

Not only is it highly important that each building house source materials for teachers, but provision should also be made for space where teachers can come together to consult and use them. Time should be set aside when teachers can work uninterrupted by their pupils and immediate teaching responsibilities.

The extreme differences among schools and families with respect to the implementation of the philosophy and organization of the DLP should be reduced. The nongraded, individualized, and child-centered philosophy should be the basis for the entire instructional program of the DLP in each classroom, in each family, and in each school. Procedures should be established to ensure better continuity of the program on a district-wide level.

Teachers need encouragement to develop individualized instructional programs for each student's needs rather than relying just on a careful grouping of the students into the classrooms of subject specialty teachers.

Interpersonal Relations

Detailed arrangements should be made to provide means by which teachers, parents and educational assistants can provide feedback to learning directors, principals and home base teachers, especially in reference to (a) teaching innovations, (b) discipline, (c) features peculiar to the DLP, (d) teaching and learning styles, (e) environmental features, (f) administrator-teacher relationships, and (g) other areas of mutual interest.

Provision must be intensified to encourage more teachers to gain new insight into why and how students can improve in their academic skills, self-concept and socialization through personalized instruction.

There is clear evidence that all forms of communication among school and community personnel should be increased, deepened and kept constant to facilitate the improvement of all aspects of the DLP.

Staff Roles

To improve communication, and to ensure an optional situation, it is suggested that each principal become an ex-officio member of all learning families in his building, assuming some of the administrative and all of the supervisory functions necessary.

Reading Evaluator Recommendations

There is a major need to provide materials correlated with the behavioral objectives contained in the level sheet, rather than having goals and expectations too closely linked to published basal reading materials.

School libraries should be established within each building and materials presently housed in the resource library should be distributed among the schools. Each classroom should have its own library. It would be advisable to purchase relatively inexpensive paperback editions for the classroom libraries. Since cataloging is too time-consuming and costly with respect to the purchase price of these paperback books, they should simply be distributed to the classrooms for circulation among the students.

Rather than operating in group-oriented fashion, individualization should exist more in terms of differentiated assignments and differentiated teaching for each child.

More careful diagnosis of children is required.

There is a need for an increase in student initiated activities. This would require a vast infusion of new technological devices and the materials that accompany them will be necessary for this to be accomplished.

There is a need for role clarification and the problem of who is specifically accountable for a child's reading growth.

The educational aide program must be continued and aides be given special training. The addition of the educational aide has given a teacher far more flexibility within the class and has allowed far more individualization than would normally have been possible.

A reading specialist should be present in each shool building; one who is aware of the latest materials and methods available, who will disseminate these to the classroom teachers.

The school should consider the introduction of more innovative methods. There is considerable evidence from recently published research studies that methods and materials placing greater stress on learning sound-symbol relationships at the very beginning produce better results than basal materials not supplemented by a strong phonics program. Any new

approaches instituted should be cast into a research framework. They should be used for several years and careful evaluation made of their effectiveness, not merely to determine whether it produces generally higher reading achievement than the prevailing methods and materials, but also to determine the kinds of children who benefit from it most; those who make average progress and, especially, those who still continue to fail. Further, it should be determined which kinds of teachers find it congenial and which do not.

It is absolutely essential that reading be cast into the framework of the content fields. All schools would include science and/or social studies within the language arts period. This will require considerable training of the teachers since it will obviously be necessary to differentiate assignments within science or social studies on the basis of one's knowledge of a child's level of reading performance.

The introduction of a decoding emphasis in the primary DLP throughout the district seems to be a major step forward and should be continued.

The evaluator feels that duplicate records should be made and that the Level Sheets containing the behavioral objectives should be given to the home base teacher as well as being kept by the language arts teacher so that both will have full information on a child's progress.

The Teaching of Reading Comprehension Skills by the classroom teacher is a major weakness. Teachers need a great deal of assistance in improving their own skills in this vital area.

The regrouping of homebased youngsters to other family members for Reading has created a communications problem. The homebase teacher frequently only has a few of her own youngsters for Reading. In order to obtain information concerning the Language Arts and Reading Skills of the other students in her class, she must solicit from two or three other teachers progress reports and other data on her students. It is our recommendation that one person should be responsible for the Reading Program for each youngster. A shared responsibility reduces the continuity of the program.

Mathematics Evaluator Recommendations

Special emphasis should be placed upon ways to individualize instruction in mathematics, how to work with groups in the classroom, and techniques designed to make the classroom a mathematics laboratory.

Teachers should be given ample opportunity to work with materials themselves so that they can better understand how these materials can be used with children.

There is a need for a continuing in-service program which will give teachers:

> an overview of the entire program in mathematics, a strong understanding of the spiral approach to teaching and how concepts are examined in greater depth at each level, and the ability to straddle several levels at once.

Each building should house a collection of source materials for teacher use, such as teachers' editions of student textbooks and professional books dealing with methods and materials, such as The Arithmetic Teacher.

There should be a more flexible approach to the deployment of para-professionals within the family. At certain times she might work with one teacher or the learning director in preparing materials for the entire learning family, or supervise large groups or project work.

Further Recommendations

The role of specialists in curriculum planning, diagnosis, and prescription should receive continued investigation and implementation.

Intermediate classes should continue to accumulate math materials and individual classroom libraries should begin to stock the math-related reading books recommended by the Mathematics Coordinator. It would be desirable to assist learning directors in acquiring techniques to teach and help teachers.

APPENDIX B

Student_____

Teacher:_____

School:_____

Tester:_____

Self concept of abilities

1) Think of your friends. Do you think you can do school work better, the same or poorer than your friends?

a) Better
b) Same
c) Poorer

2) Think of the students in your class. Do you think you can do school work better, the same or poorer than they can?

a) Better
b) Same
c) Poorer

3) When you finish this school, do you think you will be one of the best, one of the average, or one of the poor students?

a) Best
b) Average
c) Poor

4) Forget how your teachers mark your work. How good do you think your own work is?

a) Very good
b) O.K.
c) Poor

* 5) Do you think you could finish school?

a) Yes
b) Maybe
c) No

* 6) If you went to college, do you think you would be one of the best, average or poorest students?

a) Best
b) Average
c) Poorest

* Intermediate classes only

Attitudes about school

7) _____, how do you feel about coming to school every day?
(1st name)

(Interviewer: please probe and rate student along the following scale:)

Really loves going to school				Doesn't seem to care one way or another				Hates school Wants to stay home
9	8	7	6	5	4	3	2	1

8) Feelings of acceptance by others at school

Who do you think cares about how well you do in school? (Open end question. Interviewer please note who persons mentioned are. Please do not provide any cues and at the end of 15 seconds of silence, stop recording answers.)

List in order mentioned: _____ _____

_____ _____

_____

9) _____, do you think that your teachers in this school
(1st name)
are glad to see you each day? (Probing if necessary)

Coding: 2 if yes
1 if don't know
0 if no _____

10) Repeat for principal: _____

11) Repeat for teacher's aide: _____

12) Repeat for classmates: _____

Attitude Questionnaire

A) Are there pictures in your classroom of Blacks, Spanish speaking or Oriental people?

1) If so, where did you see them?

B) In your classroom do you talk about how Blacks, Spanish speaking and Oriental Americans help to make our country a good place to live?

APPENDIX C

"I" - Scale

The "I" - Scale was originally developed at the Bureau of Educational Evaluation (BEE), at Hofstra University by Drs. Estelle Gellman and Pierre Woog under contract to evaluate an ESEA Title III project. Theoretically it was derived from Charles Danowski's work at the Institute of Administrative Research at Teachers College. Danowski listed twelve polar characteristics of classroom individualization* which he believed constituted individualization.** From these twelve characteristics an observation schedule was constructed at BEE which operationalized ten of the twelve characteristics within six variables with two constraints: a) the observation was set for a duration of forty-five minutes, and b) the observer was not to interact with the teacher, the students, or products of the teacher or students. A unique feature of the scale was a blind imposed between observer and evaluator. The observers merely noted events within the classroom in a set format, but were unaware of how scores were derived from these notations. This blind was imposed from three reasons. First, it minimized the anxiety of the part of the observed teacher. Second, it minimized possible observer bias, as the observer was unaware of the precise format to be used in the evaluation of the data; and third, the evaluator was not familiar with the organization and practices in the classroom.***

The resultant scale was then used for two years in the Title III project and its entire development was presented at the 1970 North-East Educational Research Convocation.****

In calculating a teacher's "I Scores, " each obtained score per variable (ranging from 0-4) was multiplied by the number of Danowski characteristics relating to that variable. The sum of these products is the "I Score."

A brief explanation of each variable follows:

Variable 1: Large group instruction is not used excusively.

Variable 2: The entire observation time is not dominated by the teacher.

Variable 3: In large group discussion, the teacher is willing to momentarily divert from the specific prepared lesson to accommodate a student or student's question.

Variable 4: Students initiate specific learning tasks.

Variable 5: When the class is grouped for instruction, a group or groups

* See Appendix 3

** Danowski, Charles B., Teachers Who Individualize Instruction, Commission Study I N.Y. Institute of Administrative Research, Teachers College Columbia University, 1965.

*** Once developed, the scale was piloted locally to obtain an interjudge reliability of .89. Measures of validity were sought by conferring with Danowski, studying rating scales and comparing "I" scores with field scores.

**** Individualization: A Cooperative Venture Between the University and the School Organizer, Pierre Woog, Grossingers, New York, 1970.

are discussing the instructional task without the presence of an adult.

Variable 6: Products of self-initiated student acts are in evidence in the classroom.

A score of zero indicates that this variable was totally unobserved. A score of one through four indicates the degree to which that variable was observed, four being the maximum.

Variables one and two, when weighted with Danowski's characteristics, constitute nearly one-half of the total possible "I" score. They may be viewed as the most elementary and/or superficial aspect of individualization as they merely examine the degree to which the teacher does not teach the entire group as though that group was an individual. Variables three through six are more subtle for they examine the substance of interactions and pupil-initiated acts within the classroom. This becomes the substance of individualization.

APPENDIX D

DANOWSKI'S POLAR CHARACTERISTICS DISTINGUISHING INDIVIDUALIZING FROM NON-INDIVIDUALIZING TEACHER PRACTICES

Observed Behavior in Classrooms of Individualizing Teachers	Observed Behavior in Classrooms of Non-Individualizing Teachers
TEACHER BEHAVIOR	
Individualizing Pole	Non-Individualizing Pole
1T Objectives The teacher pursues multiple objectives, each objective related to a specific pupil or a small group of pupils.	The teacher pursues a single preselected objective applying it without variation to all pupils in the class.
2T Planning and Preparation The teacher's planning and preparation are in terms of individual students.	The teacher's planning and preparation are in terms of some single class norm. (This norm may be the average of the three or four "best" students.)
3T Communication-Direction The teacher communicates with individuals in the class while other individuals of the class remain engaged in different activities.	The communicates with all pupils in the entire class at one and the same time (i.e., "out loud"), even when addressing one youngster.
4T Communication-Message The teacher uses feedback information pupils as a basis for modifying the message being communicated.	The teacher's preselected communication is unmodified by circumstances other than his own objectives, or by variations in its reception by individual pupils.
5T Function The teacher's function is primarily observation of evidences of learning, or the lack of it, and the motivation and guiding of students to independent learning activity.	The teacher functions primarily as a purveyor of information.
6T Evaluation The teacher's evaluation of each pupil is based on the latter's individual growth and development.	The teacher evaluates the pupils en masse with a predetermined standard as the measure of success.

(Continued)

Danowski's Polar Characteristics Continued

PUPIL BEHAVIOR

1P	Objectives The pupils pursue objectives which they themselves have established.	The pupils pursue objectives which the teacher has established.
2P	Planning and Preparation The pupils' planning and preparation have been unique in that they are engaged in independent work, study, practice, or demonstration.	The pupils' planning and preparation have been by teacher's direction in that all pupils are engaged in the same activity.
3P	Communication - Direction The pupils are engaged in small group activity in which discussion is considered a function of learning.	The pupils' participation in class is restricted to asking or answering questions of the teacher.
4P	Communication - Message The pupils are encouraged to manifest originality, creative productivity, and purposeful divergence.	The pupils are restricted to recitation of predigested material and to conformity.
5P	Function The pupils are active participants in learning activities.	The pupils are passive recipients of knowledge.
6P	Evaluation The pupil evaluates his own growth and development.	The pupil makes no self-evaluation but accepts teacher's opinion.

APPENDIX E

Sample Vocabulary
List District #65
Evanston, Illinois

LEVEL 3

READING VOCABULARY

1. go
2. run
3. in
4. see
5. will
6. and
7. up
8. she
9. the
10. down
11. to
12. come
13. my
14. he
15. we
16. look
17. can
18. get
19. green
20. red
21. help
22. us
23. I
24. they
25. is
26. something
27. here
28. father
29. day
30. for
31. book
32. car
33. mother
34. this
35. boys
36. girls
37. school
38. little
39. play
40. funny
41. my
42. not
43. you
44. big
45. me
46. work
47. said
48. box
49. ball
50. like

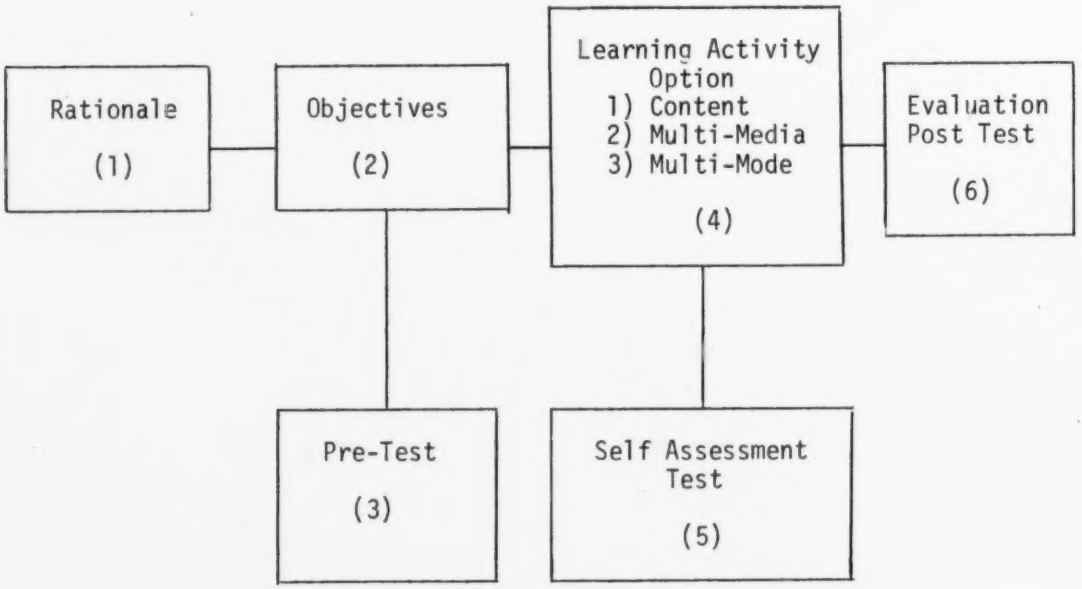
APPENDIX F

SUGGESTED MATHEMATICS TOPICS TO BE PRESENTED AT EACH LEVEL

Level:	I	II	III	IV	XV etc.
Topics					
1. Numbers & Numeration	x				x
2. Place Value					x
3. Add. & Sub.	x				x
4.					
5.	x				
6.	x				
7.					
8.					
9.					
10.					
11.					
12.					

APPENDIX G

BASIC FLOW CHART FOR CURRICULUM DESIGN
FOR CONTINUOUS PROGRESS EDUCATION



APPENDIX H

HEMPSTEAD, SCHOOL DISTRICT
1

DIRECTED LEARNING PROGRAM

PARENT QUESTIONNAIRE

Dear Parents:

As part of our evaluation of the D.L.P. we will meet with the parents in their children's school. We want to discuss your feelings about the success of the DLP, and would also like you to answer the following questions as they apply to your own experiences.

CIRCLE ONE

1. How many years has your child been in the DLP? _____

2. Do you think your child has learned more since being in the DLP? YES NO DON'T KNOW

3. Does your child seem to look forward to going to school more since being in the DLP? YES NO DON'T KNOW

4. Would you want your child to participate in the DLP next year? YES NO DON'T KNOW

5. Do you feel your child's teacher helps your child to learn? YES NO DON'T KNOW

6. Do you feel that there is enough attention in the curriculum given to the contributions of black and Spanish speaking as well as white citizens? YES NO DON'T KNOW
   a) enough materials a) YES NO DON'T KNOW

7. Do you feel that the DLP helps children of different backgrounds and races to work and learn together? YES NO DON'T KNOW

8. Do you feel that the DLP treats children as individuals? YES NO DON'T KNOW

9. Do you have any suggestions on how to improve the DLP for next year? YES NO DON'T KNOW

_____

_____

APPENDIX I

Stanine Distribution and Chi-Square Values for Reading and Mathematics Scores 1971 and 1972 in Percents

Reading	Stanine National	1 4	2 7	3 12	4 17	5 20	6 17	7 12	8 7	9 4	X^2
Age Group 6	1971	2.6	6.8	7.4	26.3	22.8	12.9	9.0	4.2	8.0	14.60
	1972	0.0	4.1	3.8	11.8	16.9	25.6	20.5	9.0	8.4	28.63
Age Group 7	1971	4.4	14.5	18.5	14.8	21.3	14.1	6.0	4.8	1.6	17.59
	1972	1.1	7.2	12.4	21.1	17.9	21.7	11.4	2.5	4.6	7.65
Age Group 8	1971	5.8	20.1	23.2	15.8	17.2	9.2	5.5	1.6	1.6	48.96
	1972	5.8	13.3	15.5	16.4	19.5	12.2	9.7	3.5	4.1	11.08
Age Group 9	1971	12.7	8.1	15.3	15.3	16.1	18.2	7.2	3.8	3.3	24.52
	1972	8.5	14.8	22.8	18.6	16.1	9.8	6.5	1.8	1.1	35.92
Age Group 10	1971	3.5	14.7	30.2	28.1	12.6	4.2	4.6	1.4	6.7	67.52
	1972	5.9	7.3	17.4	21.6	16.4	17.1	7.3	2.5	4.5	10.03
Age Group 11	1972	4.6	15.1	22.5	18.0	18.4	8.9	3.6	4.6	4.3	29.42
Mathematics											
Age Group 6	1971	3.5	8.0	8.0	17.5	21.0	15.4	9.8	7.7	9.1	8.73
	1972	0.3	0.8	4.3	8.5	20.0	21.5	10.5	19.0	15.1	70.85
Age Group 7	1971	5.4	12.3	16.1	15.8	18.3	11.7	11.9	6.0	2.5	8.49
	1972	0.9	4.4	8.3	16.2	17.9	19.2	18.1	6.9	8.1	12.36
Age Group 8	1971	7.3	21.7	19.7	18.3	10.7	8.0	9.3	2.7	2.3	51.69
	1972	1.2	7.2	9.0	20.5	19.1	14.8	13.7	7.3	7.2	6.58
Age Group 9	1971	12.1	9.7	15.8	16.6	17.4	12.6	5.3	5.6	4.9	24.36
	1972	2.1	10.9	14.1	23.2	20.9	13.7	8.6	3.7	2.8	9.26
Age Group 10	1971	19.6	28.1	22.9	16.3	6.9	4.9	1.0	0.3	0.0	172.06
	1972	0.0	6.0	10.2	18.3	20.4	14.8	14.8	7.0	8.5	10.52
Age Group 11	1972	3.2	8.4	17.8	25.0	15.3	12.9	9.2	3.7	4.5	11.37